

Rural Sociology

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A Methodological Analysis of Adoption Scales

Everett M. Rogers and L. Edna Rogers

The Folk Village: A Comparative Analysis....*George A. Hillery, Jr.*

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Political Participation among Farmers as Related to Socioeconomic
Status and Perception of the Political Process....*E. A. Wilkening,*
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Research Notes * Book Reviews

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EVERETT M. ROGERS
and L. EDNA ROGERS

A Methodological Analysis of Adoption Scales

The purpose of this article is to discuss the validity of adoption-of-farm-practices scales as determined by construct validity, judges, and self-images; the reliability as determined by split-half and test-retest techniques; the internal consistency as determined by item-to-item and item-to-total score correlations; and unidimensionality as determined by Guttman, factor analysis, and cluster analysis methods. Data are utilized from a number of research studies, but particularly those in Ohio.

The authors are associate professor at the Ohio Agricultural Experiment Station and the Ohio State University, and visiting lecturer at the Ohio State University, respectively.*

A RECENT search of the literature disclosed at least 28 different field studies by rural sociologists since 1941 that attempted to measure the general dimension of innovativeness with an adoption-of-farm-practices scale.¹ Adoption scores have been correlated with informa-

*This paper was presented at the annual meeting of the Rural Sociological Society, Pennsylvania State University, August, 1960. The authors wish to acknowledge the helpful comments of Joe Crymes, Gene Havens, and Fritz Fliegel.

¹These researchers all utilized an adoption-of-farm-practices scale but not all specifically claimed to measure the concept of innovativeness, although it seems to the present authors that they would have been justified in doing so. The field studies, in order of date of publication, are: C. R. Hoffer, *Acceptance of Approved Farming Practices among Farmers of Dutch Descent* (Michigan Agr. Exp. Sta. Spec. Bull. 316; East Lansing, 1942); Neal C. Gross, *The Diffusion of a Culture Trait in Two Iowa Townships* (Master's thesis, Iowa State University, 1942); U.S.D.A. Bureau of Agricultural Economics, *The Extension Service in Vermont* (Mimeo. Bull.; Washington, D. C., 1947); N. J. Niederfrank and others, *The Lubbock County Study: An Evaluation of the Effectiveness of Extension Work in Lubbock County, Texas* (Texas Ext. Ser. Bull.; College Station, 1948); Harold F. Kaufman, *Participation in Organized Activities in Selected Kentucky Localities* (Kentucky Agr. Exp. Sta. Bull. 528; Lexington, 1949); Gordon J. Cummings, *The Differential Adoption of Recommended Farm Practices among Dairymen in a New York Community* (Master's

tion sources, personal characteristics, nature of the farm enterprise, and other factors. The adoption dimension has been utilized by a number of researchers to classify individuals into adopter categories. In spite of the widespread utilization of adoption scales and adopter categories, little has been done to evaluate the *validity*, *reliability*, *internal consistency*, or *unidimensionality* of these adoption scales.

The purpose of the present paper is to answer the following four questions: (1) How *valid* are adoption scales as determined by (a) construct validity, (b) judges, and (c) self-images? (2) How *reliable* are adoption scales as determined by split-half and test-retest techniques? (3) To what extent are the items in adoption scales *internally con-*

thesis, Cornell University, 1950); Eugene A. Wilkening, "Sources of Information for Improved Farm Practices," *Rural Sociology*, XV (1950), 19-30; Herbert F. Lionberger, *Sources and Use of Farm and Home Information by Low Income Farmers in Missouri* (Missouri Agr. Exp. Sta. Res. Bull. 472; Columbia, 1951); H. A. Pedersen, "Cultural Differences in the Acceptance of Recommended Practices," *Rural Sociology*, XVI (1951), 37-49; Eugene A. Wilkening, *Acceptance of Improved Farm Practices in Three Coastal Plain Counties* (North Carolina Agr. Exp. Sta. Tech. Bull. 98; Chapel Hill, 1952); Eugene A. Wilkening, *Adoption of Improved Farm Practices as Related to Family Factors* (Wisconsin Agr. Exp. Sta. Res. Bull. 183; Madison, 1953); C. Paul Marsh and A. Lee Coleman, "Farmers' Practice Adoption Rates in Relation to Adoption Rates of 'Leaders,'" *Rural Sociology*, XIX (1954), 180-181; James A. Duncan and Burton W. Kreitlow, "Selected Cultural Characteristics and the Acceptance of Educational Programs and Practices," *Rural Sociology*, XIX (1954), 349-357; Robert M. Dimit, *Diffusion and Adoption of Farm Practices in Eleven Counties in Southwest Virginia* (Ph.D. thesis, Iowa State University, 1954); Alvaro Chaparro, *Role Expectations and Adoption of New Farm Practices* (Ph.D. thesis, Pennsylvania State University, 1955); Herbert F. Lionberger, *Information-Seeking Habits and Characteristics of Farm Operators* (Missouri Agr. Exp. Sta. Res. Bull. 581; Columbia, 1955); Frederick C. Fliegel, *A Multiple Correlation Analysis of Factors Associated with Adoption of Farm Practices* (Ph.D. thesis, University of Wisconsin, 1955); James H. Copp, *Personal and Social Factors Associated with the Adoption of Recommended Farm Practices among Cattlemen* (Kansas Agr. Exp. Sta. Tech. Bull. 83; Manhattan, 1956); Everett M. Rogers, *A Conceptual Variable Analysis of Technological Change* (Ph.D. thesis, Iowa State University, 1957); David E. Lindstrom, "Diffusion of Agricultural and Home Economics Practices in a Japanese Rural Community," *Rural Sociology*, XXIII (1958), 171-183; C. R. Hoffer and Dale Stangland, "Farmers' Attitudes and Values in Relation to Adoption of Approved Practices in Corn Growing," *Rural Sociology*, XXIII (1958), 112-120; A. W. van den Ban, "Some Characteristics of Progressive Farmers in the Netherlands," *Rural Sociology*, XXII (1957), 205-212; F. E. Emery and O. A. Oeser, *Information, Decision and Action* (Carlton, Victoria: Melbourne University Press, 1958); Murray A. Straus and Allen J. Estep, *Education for Technological Change among Wisconsin Farmers* (Wisconsin Agr. Exp. Sta. Res. Bull. 214; Madison, 1959); Charles E. Ramsey and others, "Values and the Adoption of Practices," *Rural Sociology*, XXIV (1959), 35-47; Ward W. Bauder, *Iowa Farm Operators' and Farm Landlords' Knowledge of Participation in and Acceptance of the Old Age and Survivors Insurance Programs* (Iowa Agr. Exp. Sta. Res. Bull. 479; Ames, 1960); Everett M. Rogers, *Characteristics of Innovators and Other Adopter Categories* (Ohio Agr. Exp. Sta. Res. Bull. 882; Wooster, 1961); and Anne Willem van den Ban, "Locality Group Differences in the Adoption of New Farm Practices," *Rural Sociology*, XXV (1960), 307-320.

sistent as determined by (a) item-to-item, and (b) item-to-total-score correlations? (4) To what extent are adoption scales *unidimensional* as determined by (a) Guttman, (b) factor analysis, and (c) cluster analysis methods?

Answers to these questions should provide some principles that researchers may utilize in constructing improved adoption scales.

SOURCES OF DATA

The data utilized to answer these questions come mainly from these six field studies, supplemented by several other published works:

1. A 1955 Iowa study which included personal interviews with 148 farm operators residing in one central Iowa community.²

2. A 1957 Ohio study that involved interviews with a state-wide random sample of 104 "commercial" farmers.

3. A 1959 Ohio study that involved reinterviews with 87 of the 104 respondents from the 1957 Ohio study.

4. A 1958 Ohio innovator study in which 99 innovators, nominated by a random sample of 44 county Extension agents, were contacted by mailed questionnaires.³

5. A 1958 Ohio fertilizer demonstration study of 126 commercial farmers in two counties who were personally interviewed concerning their attitudes toward fertilizer.⁴

6. A 1960 Ohio study that involved personal interviews with 114 of the 126 respondents in the 1958 Ohio fertilizer demonstration study.

VALIDITY OF ADOPTION SCALES

Validity is the degree to which an operation measures a desired dimension. Three indications of the validity of adoption scales as operational measures of innovativeness are available in the present analysis: (1) construct validity, (2) judge validity, and (3) self-images.

1. *Construct validity* is demonstrated when the empirical results of an investigation are in agreement with theoretical predictions.⁵ It is a process of validation in which theory and method go hand-in-hand. When an operational measure of a construct or dimension is found to behave as theory predicts, its validity as well as the theory

²Further detail on this study may be found in Rogers, *A Conceptual Variable*.

³Further detail on this study may be found in Rogers, *Characteristics of Innovators*.

⁴Further detail on this study is contained in Everett M. Rogers and others, *The Impact of Demonstrations on Farmers' Attitudes toward Fertilizer: A Progress Report* (Ohio Agr. Exp. Sta. Mimeo. Rept. AE 308; Wooster, 1959).

⁵Construct validity was originally suggested by Cronbach and Meehl after a review of the shortcomings of external "differentiating" validity criterion. Lee J. Cronbach and Paul E. Meehl, "Construct Validity in Psychological Tests," *Psychological Bulletin*, LII (1955), 281-302.

is supported. The more numerous the successful predictions, the greater is the basis for claiming construct validity.

Generally speaking, the statistical analysis of the data from the six studies under discussion empirically confirms theoretical predictions. The relationship between adoption scores and independent variables is usually in the hypothesized direction, and thus, to that extent, indicates the construct validity of the adoption scales. In an analysis utilizing the data from the 1957 Ohio and the 1958 Ohio innovators studies, significant relationships were found in the direction hypothesized in 25 out of 31 cases.⁶

2. *Judges* may be utilized as an external, differentiating criterion to determine validity. Evidence of "judge validity" is available from the 1958 Ohio innovators study.

A random sample of 44 of the 88 county agricultural extension agents in Ohio were asked to provide the names and address of innovators in their counties. Since the county agents had been exposed to a training session on innovators a year previously, the concept of "innovation" was not completely new to them. Of the 150 innovators nominated by county agents who were mailed questionnaires, 146 responded. As one portion of the questionnaire, the nominated innovators were administered an adoption scale. Their scores on this instrument were then compared to the adopter category norms available from the 1957 Ohio study.⁷ Out of the 146 nominated innovators, 50 had scores lower than the norm of 5.42 required to be an innovator, and 96 scored above the norm.⁸ In other words, 66 per cent of the farmers nominated as innovators scored in the innovator category on an adoption scale. The remaining 34 per cent were mostly in the early adopter category.

3. A third validity measure available is that of *self-images*.⁹ In the 1957 Ohio study and the 1958 innovator study, each respondent was asked to indicate the adopter category to which he belonged. If a respondent identifies himself with an adopter category to which he

⁶Further detail may be found in Rogers, *Characteristics of Innovators*. For example, factors most highly related to adoption scores were social status, education, income, specialization, and size of farm.

⁷Using the categorization scheme by Everett M. Rogers, "Categorizing the Adopters of Agricultural Practices," *Rural Sociology*, XXIII (1958), 345-354.

⁸The 96 innovators from this source were combined in the analyses presented later in this article with 3 innovators among the 104 respondents in the 1957 Ohio study for a total of 99 innovators.

⁹Hess and Miller found that the self-images of Pennsylvania dairymen were not completely accurate; there was a tendency to rate oneself as a "better farmer" than objective measures indicated. C. V. Hess and J. F. Miller, *Some Personal, Economic, and Sociological Factors Influencing Dairymen's Actions and Success* (Pennsylvania Agr. Exp. Sta. Bull. 577; University Park, 1954).

is assigned on the basis of an adoption scale, there is some additional evidence that the adoption scale is valid.

Table 1 shows a general tendency for the self-images to be accurate; Robinson's coefficient of agreement "A" between adopter categories and self-images is .79.¹⁰ Innovators and the early majority have more accurate self-images than laggards. Almost 30 per cent of the 1957 Ohio sample rated themselves in the same adopter category as that indicated by an adoption score. Another 46 per cent rated themselves in an adjacent adopter category; 24 per cent had more widely inaccurate self-images.

Table 1. Self-images as to adopter category by adopter category as determined by an adoption scale

Self-image as to adopter category	Adopter category as determined by an adoption scale				
	Inno- vators	Early adopters	Early ma- jority	Late ma- jority	Lag- gards
Innovators	52	7	3	3	2
Early adopters	35	1	6	7	1
Early majority	10	6	20	19	6
Late majority	1	0	5	5	4
Laggards	0	0	1	1	4
Totals	98*	14	35	35	17

*One innovator in the 1958 innovator sample did not respond to this question.

On the basis of the three present measures of validity, there is fairly strong support for believing that adoption scales have in some reasonable degree measured the construct of innovativeness.

Some doubts about the validity of the recall dates of adoption of a single innovation have been raised by Menzel's findings.¹¹ A sample of 71 medical doctors in four cities were asked to recall the date on which they first used a new drug. Their prescription records were

¹⁰W. S. Robinson, "The Statistical Measurement of Agreement," *American Sociological Review*, XXII (1957), 17-25.

¹¹Herbert Menzel, "Public and Private Conformity under Different Conditions of Acceptance in the Group," *Journal of Abnormal and Social Psychology*, LV (1957), 398-402.

independently checked at local pharmacies. Only 27 per cent of the interview dates fell within one month of prescription records. Another study, by Parry and Crossley¹² suggests that not only adoption data but many other variables, such as age, voting behavior, and car ownership, are invalidly reported in personal interviews. These authors found invalidity ranging from a twentieth to nearly a half of the responses received on various types of factual questions, when they checked interview data against courthouse and other records.¹³

The evidence to date suggests that recall dates of a single innovation may be considerably invalid, but that adoption scales composed of a number of innovations may help to "balance out" part of this invalidity.

RELIABILITY OF ADOPTION SCALES

Reliability is the degree to which an operation consistently measures the same dimension over time.

1. *Split-half* reliability coefficients are available from a number of field studies and are shown in Table 2. The results of these analyses

Table 2. Split-half reliability coefficients for adoption scales

Field study	Coefficient of reliability after Spearman-Brown Correction	Number of items in scale
1. 1955 Iowa	.70	24
2. 1957 Ohio	.57	23
3. 1959 Ohio	.90	23
4. 1958 Ohio fertilizer study	.73	14
5. Adler educational innovations*	.84	33
6. Mort-Pierce educational innovations†	.84	22

*David Adler, *An Analysis of Quality in the Associated Public School Systems through a Study of the Patterns of Diffusion of Selected Educational Practices* (D.Ed. dissertation, N. Y.: Teachers College, Columbia University, 1955).

†Paul R. Mort and Truman M. Pierce, *A Time Scale for Measuring the Adaptability of School Systems* (N. Y.: Metropolitan School Study Council, 1947), p. 6. Typical education innovations in this adoption scale were remedial reading programs, dental inspection, student funds, and film libraries. The respondents were public school systems.

¹²Hugh J. Parry and Helen M. Crossley, "Validity of Responses to Survey Questions," *Public Opinion Quarterly*, XIV (1950), 61-80.

¹³Somewhat similar studies to determine the degree of validity of recall data have been conducted by Smith with sociology students and by Pyles and others with

generally indicate a fair degree of scale reliability, but with room for improvement. One of the most dependable means of increasing scale reliability is to lengthen the scale by adding items (of equal validity to those already contained). Only five out of the 28 adoption scales reviewed in the present paper have contained more than 13 items.

2. *Test-retest* methods are also available to determine reliability with the data obtained from the 1957-1959 Ohio studies and the 1958-1960 Ohio fertilizer demonstration studies. These investigations both included data from re-interviews after a two year period had elapsed. A generally high test-retest reliability was found for the total adoption scores in both studies. Correlation between original and re-interview adoption scores is .78 for the 1957-1959 studies and .74 for the 1958-1960 Ohio fertilizer demonstration studies.¹⁴

The consistency of the respondent's recall of adoption dates of a practice at two points in time for each of the 23 adoption items in the 1957-1959 Ohio studies was also determined. The year reported by a respondent in the 1957 interview as the year he adopted a certain practice or did not adopt was plotted against the answer he gave in 1959.¹⁵ From the resulting 23 tables a gross measure of adoption versus nonadoption recall and a more refined measurement of adoption year recall were computed.

The measure of adoption versus nonadoption recall was simply a percentage of error based on the agreement of the 1957-1959 data as to whether a practice was adopted or not adopted, regardless of the year of adoption (Table 3). The percentage of error is fairly low for most practices, yet there is an adoption recall error of 20 per cent or more for 6 of the 23 items.

Robinson's "A's" were computed to measure adoption year recall. They measure not only the agreement of whether the practice was or was not adopted, but also the agreement between the adoption years given in the 1957 and the 1959 interviews. These findings are also

mothers. Mapheus Smith, "An Experiment to Test the Reliability of Estimates of Use of Time," *Journal of Applied Psychology*, XXII (1938), 400-407; and M. K. Pyles and others, "Accuracy of Mothers' Reports on Birth and Development," *Child Development*, VI (1935), 165-175.

¹⁴It should be pointed out that another influence, other than the lack of reliability, is involved in these test-retest correlations. *Discontinuances* of farm practices during the period between the two interviews would affect the test-retest reliability in a negative fashion. Donald E. Johnson and Anne W. van den Ban, "The Dynamics of Farm Practice Change," paper presented at Midwest Sociological Society, April, 1959, Lincoln, Nebraska.

¹⁵Practices that were adopted during the two-year time lapse from 1957 to 1959 were coded as "not adopted" for the sake of the present analysis. One practice, systemic cattle grub control, could not be included in the present analysis because of its lack of widespread adoption.

Table 3. 1957-1959 error in recall of adoption versus nonadoption, and agreement in recall of 1957-1959 adoption year

Practice	Percentage recall errors	Robinson's "A" between 1957-1959 adoption dates
1. Band seeding of grasses and legumes	24	.60
2. 2, 4-D weed spray	13	.82
3. Spray for spittle bugs	8	.82
4. Spray Canadian thistles with amino triazole	12	.52
5. Ranger or buffalo alfalfa varieties	19	.74
6. Clintland oats variety	45	.53
7. Soil test	20	.79
8. Decon or Warfarin for rat control	11	.77
9. PTZ for sheep worms	7	.93
10. Clip rams	14	.76
11. Feed antibiotics to hogs	26	.68
12. Lindane or benzene hexachloride for hog mange	22	.77
13. Piperazine for hog worms	12	.86
14. Raise Christmas trees	2	.78
15. Vaccinate poultry for bronchitis	9	.82
16. Use mechanical poultry waterer	5	.80
17. Raise hybrid chicks	22	.79
18. Stilbestrol for beef	5	.72
19. PTZ for cattle worms	6	.83
20. Artificial breeding	15	.85
21. Pipeline milking system	6	.53
22. Bulk milk tank	3	.64
23. Bulk fertilizer application	9	.84

present in Table 3. The coefficients of agreement are all quite high, with a range from + .52 to + .93. Respondent recall of adoption data was not completely consistent over the two-year period, but it was fairly accurate within usable limits.

Campbell and Katona¹⁶ suggested several general statements about recall ability that are generally supported by our data.¹⁷

1. Frequency distributions for a number of respondents are more consistent than individual responses.
2. Recall over a longer period is more difficult.
3. Less eventful experiences are more difficult to recall.

INTERNAL CONSISTENCY OF ADOPTION SCALES

Internal consistency is the degree to which a scale's items are inter-correlated.

1. One method of determining the internal consistency of adoption scale items is to correlate each item with adoption scores. Item-to-total-score correlations ranged from a low of + .16 to a high of + .70 for the 1957 Ohio data. Similar item-to-total-score correlations for the 1955 Iowa study ranged from - .10 to + .81; all but four practices were significant and in the positive direction.¹⁸

In the 1958 Ohio fertilizer demonstration study, item-to-total-score correlations ranged from + .20 to + .70 for a 14-practice scale; all but three items were significant and positive.

2. Another measure of internal consistency is the intercorrelations among all of the items in an adoption scale.

The 276 intercorrelations in the 1955 Iowa study ranged from a low of - .45 to a high of + .68. The 300 intercorrelations in the 1957 Ohio study ranged from a low of - .21 to a high of + .92. Only 20 (7 per cent) of the intercorrelations were negative. Copp¹⁹ presented 210 intercorrelations in a 1954 study of Kansas cattlemen. Correlations ranged from a low of - .13 to a high of + .60. Only 26 (12 per cent) were negative. Fliegel²⁰ presented 55 intercorrelations in a 1952 study of Wisconsin dairymen. Correlations ranged from - .07 to + .45.

From these analyses of the internal consistency of adoption scales, it can be concluded that most of the items are generally positively related but that the strength of the interrelationships is far from high in most cases. There is little justification for including practices in

¹⁶A. Angus Campbell and George Katona, "The Sample Survey: A Technique for Social Science Research," in Leon Festinger and Daniel Katz, eds., *Research Methods in the Behavioral Sciences* (New York: Dryden, 1953), pp. 41-51.

¹⁷Gordon F. DeJong and C. Milton Coughenour, "Reliability and Comparability of Two Instruments for Determining Reference Groups in Farm Practice Decisions," *Rural Sociology*, XXV (1960), 298-307. These authors found that other types of data are recalled inconsistently, just as the present findings indicate that adoption dates are recalled with some inconsistency. Reinterviews with Kentucky farmers after four weeks as to reference groups found, in some cases, only a 50 per cent response consistency.

¹⁸The single practice that was negative was only adopted by 5 per cent of the respondents.

¹⁹Copp, *op. cit.*, p. 8.

²⁰Fliegel, *op. cit.*, p. 48.

an adoption scale that are negatively related; the negative relationship suggests the items measure different dimensions. No discernible patterns could be observed among the negative intercorrelations in the present data. There is likewise little justification for including items in adoption scales that are almost completely interrelated.²¹

The intercorrelations obtained in past analyses certainly emphasize the need for including a greater number of practices in adoption scales.

UNIDIMENSIONALITY OF ADOPTION SCALES

Unidimensionality is the degree to which a scale measures a single dimension.

1. Three *Guttman* scaling analyses of adoption scales have resulted in coefficients of reproducibility below the acceptable level of 90 per cent. For example, Abel²² found a five-item homemaking adoption scale did not yield a satisfactory coefficient of reproducibility. Copp's²³ findings are supportive, as are those from the Iowa study where a coefficient of reproducibility of 82.3 per cent was obtained.

2. *Factor analysis* of adoption scores have been attempted by Copp and Fliegel. Copp²⁴ extracted a first common factor which explained 32 per cent of the variation in his eight-item adoption scale, and which he assumed was an expression of innovativeness. Fliegel²⁵ extracted a first common factor which explained 20 per cent of the variation in his 11 item scale.

It should be pointed out that neither factor analysis nor cluster analysis, in a strict sense, measures unidimensionality. Both factor analysis and cluster analysis, however, indicate the presence of a common "factor" or dimension among a set of items.

3. A *cluster analysis*²⁶ of the 1957 Ohio data disclosed a minor cluster of six practices in addition to the major cluster of ten (out of the 23 practices) which seemed to indicate a general dimension of innovativeness. The clusters were not along the lines of farm enterprise such as dairying, swine, and crops.

The methods of determining unidimensionality reviewed in this article do not yield a clear-cut answer as to whether adoption scales measure only a single general dimension, innovativeness.

²¹In fact, to take an extreme case, if all practices in the adoption scale were inter-correlated near unity, there would be no need for a scale, as any one scale item would measure the desired dimension.

²²Helen C. Abel, "The Use of Scaling Analysis in Study of the Differential Adoption of Homemaking Practices," *Rural Sociology*, XVII (1952), 161-165.

²³Copp, *op. cit.*, p. 7.

²⁴*Ibid.*, p. 8.

²⁵Fliegel, *op. cit.*, p. 50.

²⁶Cluster analysis is described in C. J. Adcock, *Factorial Analysis for Non-Mathematicians* (New York: Cambridge University Press, 1954).

OTHER CONSIDERATIONS

There are several additional methodological aspects of adoption scales to consider besides those already discussed.

1. Most researchers have weighted each item in their scale on an equal basis. This procedure assumes that each item is equally important in contributing to the total adoption scale. Attempts to utilize judges or factor loadings on each element have been attempted, but the resulting scores have usually been found to correlate + .96 or above with unweighted scores.²⁷ The conclusion is that weighting adopting scale items is not justified.

2. Several researchers have constructed their adoption scales to correct for the practices that "don't apply" to certain farmers, for example, as a dairy practice does not apply to a farmer with no dairy cows.²⁸ Using 1955 Iowa data, two adoption scores were computed for each farmer. One score was computed with a correction for the "don't apply" responses and the other score was computed without this correction. Correlation is + .89; 21 per cent of the variation in the uncorrected scores was not explained by the corrected scores. There appears to be sufficient justification for correcting adoption scores for "don't apply" responses.

3. A search of the literature disclosed that only two²⁹ of the 28 researchers utilizing adoption scales gave greater credit for adoption of a practice at an earlier date. The other 26 adoption scales simply asked respondents whether or not they had adopted each practice, and did not determine *when* each practice was adopted.

Does an adoption scale that measures *how many* innovations are adopted also measure the tendency to adopt innovations at a relatively early date? Correlations were computed between these two types of adoption scales for (1) the 1955 Iowa data and (2) the 1957 Ohio data. Correlations are + .79 and + .89, respectively. This means that 38 per cent and 21 per cent of the variation in the two adoption scores is not accounted for unless *time* of adoption is obtained as

²⁷Alvin W. Donahoo, *Soil Management Practices used by Participants in the Institutional On-Farm Training Program for Veterans* (Master's thesis, Iowa State University, 1949), p. 12, reported a correlation of +.98 between weighted (by judges) and unweighted adoption-of-soils-practices scores. Fliegel (*op. cit.*, p. 55) reported a correlation of +.96 between unweighted scores and scores weighted on the basis of factor loadings derived from a factor analysis.

²⁸The most usual method of correcting for "don't apply" responses is to divide the number of practices adopted by the number that apply.

²⁹These two studies are Lionberger, *Information-seeking Habits*, and Rogers, *Characteristics of Innovators*. Lionberger does not provide detail as to exactly how he gave greater credit for relatively early adoption of the 10 practices in his adoption scale. Rogers utilized sten scores as a method of weighting for relatively early-late adoption of each practice in his 23-item scale.

well as number of practices adopted.³⁰ One may tentatively conclude that including a measure of time of adoption for each practice in an adoption scale adds greater sensitivity.³¹

4. *Obsolescence* is the degree to which a measure becomes useless over time. The intrinsic nature of adoption scales makes them obsolete. For example, an adoption scale utilized in 1940 might have little utility today. The items in an adoption scale, however, can be deleted and other items added so as to improve and perhaps shorten the adoption scale with ensuing administrations. For example, using the 1957 Ohio data, the authors were able to shorten the original 23-item scale into a 12-item scale that yielded essentially similar results.

CONCLUSIONS

Evidence presented in this article suggests that adoption scales are reasonably valid, reliable, and internally consistent. Clear-cut support of unidimensionality, however, is not apparent. The ability of farmers consistently to recall the date they adopted farm innovations is far from ideal, yet it is probably within usable limits, at least in the aggregate.

Suggestions for improving adoption scales are (1) increase the number of items, (2) do not weight scale items, (3) correct adoption scores for "don't apply" responses, and (4) determine *when* each practice was adopted in addition to whether it was adopted or not.

Sobering implications for sociologists utilizing personal interview methods of data-collection are contained in the relatively low consistency with which respondents reported information in reinterviews, and in the invalidity with which even factual information was reported.

³⁰These correlations between the two types of adoption scores tentatively suggest that past researchers who did not weight their respondents for relatively early-late adoption of practices would have been justified in assuming that their adoption scales not only measured the number of practices adopted, but also the relatively early-late time-of-adoption dimension. This seems reasonable if we consider that at any one point in time (when the adoption scale is administered), the farmer who has adopted, say, 12 practices has generally tended to adopt practices at a relatively earlier date than the individual who has adopted 6 practices.

³¹Although inquiry as to the adoption versus nonadoption of each practice may be more accurate than recall of the date of adoption of the practice.

GEORGE A. HILLERY, JR.

The Folk Village: A Comparative Analysis

A nonmathematical model is developed of one type of community, termed the "folk village." Ten villages, each from a different culture, provide the only data, and the model's nineteen components are based on traits found in all the villages. The components (or subelements) are grouped into elements of interaction, space, activities, sentiment, and norms. The more variable components are eliminated as possible integrating factors, on the premise that the nature of the folk village resides in its constants. One means of integrating the components is offered in the definition: *The folk village is a localized system of co-operating families.* (Co-operation is institutionalized as mutual aid.) This definition furnishes a basis for describing the elements as they appear in the villages. The findings are used as limiting factors in evaluating earlier concepts. Selected definitions of community are reexamined, and the relation of the model to Redfield's folk society is briefly indicated.

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PERHAPS most unsung among sociological and anthropological works are the painstaking and detailed descriptions of identifiable social systems which have been accumulating, especially over the past few decades. These descriptions are in reality sources of data, sources which have greater value if they are taken in concert than if examined singly. The primary goal of this paper is to provide a synthesis of a few of these works, a synthesis pertaining to a relatively homogeneous social form and one which permits inferences about other sociological concepts.

The particular kind of social system to be examined is referred to

*This is an expanded version of a paper read before the annual meeting of the American Sociological Association, New York, August 30, 1960, under the title, "A Comparative Analysis of Ten Villages." Most of the research on which the paper was based was done by the writer as a postdoctoral fellow at the University of Florida. Appreciation is extended to numerous colleagues, and especially to T. Lynn Smith and Willis A. Sutton, Jr., for criticisms which bear on the paper at several crucial points. Final responsibility, of course, rests with the writer.

as the "folk village." The word "village" is probably the most troublesome portion of the term, primarily in lacking unanimity of meaning. On the one hand, a village is a type of *ecological* structure in which the residences are grouped in one location and are separated from the fields.¹ Nine of the ten villages to be examined conform, the exception being the New England "town" (the Hilltown of this study—see Table 1).² On the other hand, a "village" more loosely denotes a kind of *social* structure which theoretically could exist on several possible types of land settlement.³ It is in this social aspect that the type to be discussed here approaches homogeneity, particularly in that it adheres closely to the concept of "folk" employed by Redfield.⁴ Thus the term "folk village" describes a way of life more than a settlement pattern, although the type can be identified by means of its spatial arrangements, as has been indicated and as will be noted again.

The data presented in this study are not new. Rather, stress is placed on the emphasis and interpretation of the data. All of the elements to be discussed have as their *raison d'être* the fact that they were mentioned either directly or indirectly in the studies used as sources (see Table 1). Among the important features of the present survey are three: (1) It shows the existence of village elements as they function in on-going social systems. In other words, these elements have been documented as a complex of traits found in widely separated systems. One cannot say that some were garnered from this society, others from that. Moreover, they are not peculiar to one system—they are found in many (in fact, they are found in all of the villages considered). (2) All of

¹T. Lynn Smith, *The Sociology of Rural Life* (New York: Harper, 1953), pp. 201-209.

²The settlement pattern in this American village is one of farmsteads scattered about a village center, with most or all of the residences located on the land which is farmed.

³*Ibid.*, p. 372; J. H. Kolb, *Service Relations of Town and Country* (University of Wisconsin Agr. Exp. Sta. Res. Bull. 58; Madison, 1923); Lowry Nelson, *Rural Sociology* (New York: American Book Company, 1955), pp. 87ff.

⁴Robert Redfield, "The Folk Society," *American Journal of Sociology*, LII (1947), 293-308. The meaning is equivalent to the term "peasant" as used by Firth. See Raymond Firth, *Elements of Social Organization* (New York: Philosophical Library, 1951), p. 88.

[Note to Table 1]

*All data used in this paper were gathered exclusively from the following sources (listed in the order in which they appear in the table): William Whitman, *The Pueblo Indian of San Ildefonso: A Changing Culture* (New York: Columbia University Press, 1947); John F. Embree, *Suye Mura: A Japanese Village* (Chicago: University of Chicago Press, 1939); Margaret Mead, *New Lives for Old: Cultural Transformation—Manus, 1928-1953* (New York: William Morrow, 1956); Thomas Gladwin and Seymour B. Sarason, *Truk: Man in Paradise* (New York: Wenner-Gren Foundation for Anthropological Research, 1953; Viking Fund, Publications in Anthropology, No. 20); Ward H. Goodenough, *Property, Kin, and Community on Truk* (New Haven: Yale University Press, 1951; Yale University Publications in Anthropology,

Table 1. Selected identifying traits for the ten villages employed in the comparative analysis

Village	Culture	Population	Major economic activity	Time of study	Investigators*
San Ildefonso Pueblo	Indian	128	corn, pottery	1936-1939	Whitman
Suye mura†	Southern Japan	58-194	rice, silk	1935-1936	Embree
New Peri	Melanesian	200-300	fish	1953	Mead
Romonom	Micronesian	230-240	fish	1947-1948	Gladwin, Seymour, Goodenough
Chan Kom	Maya Indian	251	corn	1930-1931	Redfield and Villa R
Hilltown‡	New England American‡	1,000-1,825	diversified agriculture, lumbering	1938, 1949	Zimmerman, Hatch, Homans
Kaihsienkung	Lower Yangtze Valley, China	1,458	rice, sheep, silk	1935	Fei
Dragalevtsy	Bulgaria, South East Europe	1,669	diversified agriculture	1934-1937	Sanders
Shamirpet	Central India	2,494	diversified agriculture	1951-1952	Dube
Silwa	Upper Egypt	3,500	wheat, millet, diversified agriculture	1951	Ammar

No. 46); Robert Redfield and Alfonso Villa R, *Chan Kom: A Maya Village* (Washington: Carnegie Institution of Washington, 1934; Publication No. 448); Carle C. Zimmerman, *The Changing Community* (New York: Harper, 1938); David L. Hatch, "Changes in the Structure and Function of a Rural New England Community since 1900," unpublished Harvard doctoral dissertation, 1948; George C. Homans, *The Human Group* (New York: Harcourt, Brace, 1950); Hsiao-Tung Fei, *Peasant Life in China: A Field Study of Country Life in the Yangtze Valley* (London: Kegan Paul, Trench, Trubner and Company, 1939); Irwin T. Sanders, *Balkan Village* (Lexington: University of Kentucky Press, 1949); S. C. Dube, *Indian Village* (Ithaca: Cornell University Press, 1955); Hamed Ammar, *Growing Up in an Egyptian Village: Silwa, Province of Aswan* (London: Routledge and Kegan Paul, 1954).

†Represented by Kawaze buraku.

‡Only Hilltown in the nineteenth century is considered here.

the elements for the villages are documented—none are either hypothetical or speculative. This point requires emphasis. Either each element is mentioned in the sources specifically or its existence is clearly inferable. None of the elements is associated with contradictory data,⁵ and none is lacking in substantiation. (3) The elements are viewed cross-culturally. They represent the village in general, not any given village from any one culture. Thus the main value of the present study rests in its universal application to the cases involved, in its documentation, and in its cross-cultural perspective.

METHOD

An initial step in the study was one of providing guidelines to aid in isolating from the data available in the literature a relatively homogeneous collection of existing social forms. The objective was to describe a social system which agreed with the qualities common to most definitions of community: a social group inhabiting a common territory and having one or more additional common ties.⁶ The sources used thus had to meet the initial criterion of (1) agreeing with this minimum formulation of community. In addition, (2) the social systems had to be small enough to permit a relatively complete inventory of their traits; and (3) only villages from different cultures were used in order to maximize the extent of coverage.⁷ (4) To insure a relatively complete set of observations, each study had to be reported in extensive, book-length accounts (and preferably first-hand accounts).⁸ (5) As a corollary of the first criterion, each account had to concern an identifiable social system. (Thus studies of counties or cultures could not be used unless data were provided for the specific social systems they contained.) (6) To minimize biases of any one methodological school, no more than one study by any given investigator was employed. There are scores of studies which meet all of these criteria.

⁵Redfield's analysis of Chan Kom's status system might prove an exception. (See Table I.) According to his *description*, there were status differences among families which, though not too important to the people, nonetheless increased through the years. Redfield does not choose to call this situation one of social class. Others, including the writer, would apply the term.

⁶Cf. George A. Hillery, Jr., "Definitions of Community: Areas of Agreement," *Rural Sociology*, XX (1955), 118.

⁷George A. Hillery, Jr., "A Critique of Selected Community Concepts," *Social Forces*, XXXVII (1959), 237-242. The significance of a cross-cultural approach to community analysis has been cogently expressed by Julian H. Steward, *Area Research: Theory and Practice* (New York: Social Science Research Council, Bull. 63, 1960), esp. pp. 112ff. See also pp. 20-53 and 156.

⁸Hilltown, again, is the only exception. It has remained among the 10 villages in part because it was one of the two original villages used in developing this approach (New Peri was the other). That it compares so favorably with the subsequent studies, in spite of the fact that the information used here is essentially historical, is a tribute to those who collected the data.

The writer is describing only the first ten villages which he subjected to analysis.

The data extracted from the sources were basically qualitative. The main questions were: What traits do all villages have, and which do they lack? (Space does not permit an explicit treatment of the latter, more difficult, question.) No formal method was used to isolate the qualities, although as the research proceeded, the writer came to be guided to some extent by the universal culture pattern of Wissler and particularly by the elements of the human group as formulated by Homans.⁹ Essentially, the approach was an approximation of the "point to point" method employed by W. I. Thomas.¹⁰ The investigation commenced with a comparison of two villages (Hilltown and New Peri). A model was built from their common elements. Another village was compared and the model was modified. This procedure continued until an inventory of three consecutive villages yielded no further changes in the model.

The inventory procedure consisted in reading the case study and noting those passages which confirmed or denied the presence of a given element. Then, each quotation was copied on a sheet which pertained only to one given element. In this manner, all villages could be systematically compared concerning any element. (Or, the catalogue sheets could be so arranged that a summary of all elements could be provided for any given village.)

The process of analysis accordingly advanced by means of several stages:

1. Two initial village studies were selected.
2. A survey was made of their common elements.
3. A tentative trait list was compiled.
4. Relevant quotations were copied from these studies corresponding to the elements in the trait list.
5. Another village study was selected.
6. A survey was made of the elements common to the three villages.
7. The trait list was modified.
8. Relevant quotations were copied from this study corresponding to the elements in the trait list.
9. The original studies were resurveyed to ascertain the manner in which they compared with the modified traits.

⁹Clark Wissler, *Man and Culture* (New York: Thomas Y. Crowell, 1923), pp. 73-98; George C. Homans, *The Human Group* (New York: Harcourt, Brace, 1950).

¹⁰Herbert Blumer, *Critiques of Research in the Social Sciences: I, An Appraisal of Thomas and Znaniecki's The Polish Peasant in Europe and America* (New York: Social Science Research Council Bull. 44, 1939), pp. 166-167, 172, 190-191. Note that Thomas was not speaking so much of an individual research effort as of the efforts of "science" in general. The writer believes that the conceptual transfer is valid (Thomas hints as much: cf. *ibid.*, p. 172).

10. Relevant quotations were copied from these original studies corresponding to the elements in the trait list.

Finally, beginning with step 5 and continuing through step 10 for each village, ten villages were eventually surveyed. The trait list, as it appeared after five villages had been surveyed, is given in an earlier publication.¹¹

The criteria used for deciding whether a village had a given element are furnished in abbreviated form in the column labeled "Description" in Table 2. The evolutionary nature of these criteria is important: The writer did not begin his research with them as they appear in the table (just as he did not begin with this model). Rather, the criteria arose as the various stages in the analytical process were accomplished.

Unfortunately, there is not sufficient space for detailed comment on the nature of the evidence as it appeared in the sources. The comment must suffice that the method presented here provided a collection of quotations upon which to judge whether a given component of the model was present or absent. No component was included in the model without such documentation.

THEORETICAL ORIENTATION

Five elements and nineteen subelements have been abstracted from the 13 sources and are summarized in Table 2. When integrated by means of the definition (see below), the elements form a model of the folk village. The term "model" is used in the sense that one has at his disposal a general picture which serves to describe an entire class of social objects.¹²

Although description of this model involves most of the attention of the present effort, the model is not an end in itself. It forms, in its turn, only one step in a larger study of the nature of community. But the writer's purpose at this time is not so much discussion of community as discussion of the folk village. The chief concern has been to take a conceptual and empirically grounded "photograph." The hope is to provide an answer to the following type of question:

¹¹Cf. Hillery, "A Critique of Selected Community Concepts." The present research continues the program outlined in the earlier article, but it differs in three ways: (1) The emphasis in the present paper is on an intensive analysis of the folk village rather than on a consideration of community in general. (2) The model has been expanded both in the number of villages and in its content. (3) An attempt is made to add to the model in showing at least one way in which the elements of the model are integrated.

¹²Thus, the integrating construct, given in the form of a definition, is as much a part of the model as is the list of elements described in Table 2. Further, that the model is not mathematically integrated detracts from its precision, to be sure, but does not remove it from the category of being a model. All that is necessary in order to attain the status of a conceptual model is to achieve some sort of working picture of the object in question. Models, from this point of view, may vary in the precision of their descriptive power.

Table 2. Summary description of the elements of a folk-village model
(revised)*

Element	Description
1.0 Interaction	
1.1 Personal contact	Interaction is characteristically direct rather than indirect. Almost everyone is aware of all the village members.
1.2 Social processes	Co-operation is most in evidence, though conflict and competition are also described.
2.0 Space	
2.1 Spatial integration	The space inhabited by each village is integrated into a whole, though noncontiguous parts may be included.
2.2 Spatial patterning	The village has a nucleus formed of various services clustered in a given part of its space.
2.3 Boundaries	Village boundaries are vague, i.e., though present, either they are conflicting, partly lacking, or unstable, or the inhabitants are uncertain of them.
3.0 Activities	
3.1 Base of operations	The village space is the location for village activities and is the place from which the villagers operate in journeying to the outside world.
3.2 Mobility	Horizontal mobility is low. Most villagers are native-born to the village or its immediate vicinity.
3.3 Continuance	The villages are able to persist in time.
4.0 Sentiment	
4.1 Ethnocentrism	Villagers display a hierarchy of ethnocentrism involving at least the village and its subgroups.
4.2 Awareness	Villagers are aware of the village in that they give it a name and invest a ruling body with central authority.
4.3 Homogeneity (mechanistic solidarity)	Villagers are homogeneous in respect to place of birth, in having family connections within the village, and in performing similar economic activities. Organic solidarity is also universal though rudimentary.

Table 2 (continued).

Element	Description
5.0 Norms (Institutions)	
5.1 Family	Families are sexual, socializing, and economic units, having male rulers and spatially retentive qualities for their members.
5.2 Economics	Primary production industries dominate (agriculture, fishing, or both).
5.3 Religion	Villagers profess both religious and magical beliefs.
5.4 Mutual aid	Mutual aid characterizes economic and other institutional behavior.
5.5 Government	There are both rulers and self-governing tendencies.
5.6 Stratification	Statuses are grouped into strata.
5.7 Socialization	Schools are developed to some degree through outside influences. Indigenous socialization is achieved primarily though not exclusively through the family.
5.8 Recreation	Festivals, adult games, and music are practiced in traditional and in group forms.

*For the sources used in compiling the elements of the model, see Table 1. Note that all of these elements are found in each of the ten villages described in Table 1.

When someone says, "This is a certain type of village," what does he mean and how does he know? The discussion seeks to answer this question, not for any particular village but for a class of villages distributed throughout the world.

Although the purpose of the paper is heavily descriptive, the description is on a level beyond that of the studies upon which it is based. An attempt is made to generalize from the specific studies to a particular type of social system, the folk village. On this level, the goal is to present one possible definition of one type of community and to furnish evidence that there is an empirical basis upon which the definition rests.

The theoretical focus is thus narrow, and in view of the current status of community theory—empirically grounded theory—the writer believes that such a narrow focus is justified. In effect, most of the existing community theory is abandoned, at least temporarily, in order to return to the data and to see where these data will lead. This approach has been adopted principally because of the present

confusion in community theory. Which of the many and often conflicting statements concerning community is correct?¹³ How is one to choose? The writer hopes that the inventory presented in Table 2, together with its analysis and synthesis in the text, will provide a firmer basis upon which to proceed.

The discussion of the folk village therefore provides a means of accomplishing three tasks. First, ten villages from as many different cultures are described. Second, this description is made possible by means of a composite model of the ten villages, a model which is empirically grounded and which applies to all of the villages in each of the model's details. It is the model which forms the heart and main goal of the analysis. Finally, by means of this model, some generalizations are made about the phenomenon of community. It is important to repeat, however, that no matter how heuristically strategic it may be, the folk village is only one type of community. Theoretical conclusions will thus be necessarily limited.

Important as the villages may be when considered *en masse*, all that one really has in Table 2 is something not too far removed from a congeries. How are the various elements that are common to folk villages held together? How do they work? Which are more important to the nature of this type of village?

VARIATION IN THE MODEL

To advance toward an integration of the model's elements, attention is directed first to the more important or at least conspicuous variations which the villages display, though admittedly most of the variations have been ruled out by deliberately searching for similarities. The analysis is only concerned with those variables which occur within the category of common elements.¹⁴

The purpose in making this approach is to indicate those elements which are most likely to contain the important features of village existence and to rule out those in which integrating elements are least likely to be found. Since the folk village is the basic constant among all these data, it follows that what is more "of" the village will be more constant and, vice versa, the more variable forms will be to that extent more extraneous. These assumptions, which for convenience may be labeled the criterion of similarities and the criterion of variation, respectively, are more in the order of working devices. They are

¹³A minimum of 16 basic concepts have been proposed by different authors as elements in the definition of community, these elements appearing in 94 definitions. Cf. Hillery, "Definitions of Community."

¹⁴As is perhaps apparent, although the elements are common to all villages, some elements appear with less variation from village to village than do others. The most extreme examples are stratification and mutual aid. All villages were stratified, but some were more stratified than others. On the other hand, all villagers extended mutual aid to other villagers in a relatively unvarying pattern.

designed to assist the investigation in reaching its goal of integrating the model, and they are useful only as they fulfill that end. As will be seen, they are not sufficient, but they appear to help. For, after these two criteria have been applied, the investigation is only provided with a less complicated landscape to explore. The task of synthesis yet remains to be completed. The final stage of integration will consist of offering an hypothesis designed to complete the task of linking the elements. The remaining discussion will then be occupied in examining the linkage.

The most apparent variation among the villages occurred in their institutions. As the different villages are compared with each other, the type of family is found to be either patrilineal or matrilineal (with or without the related forms), extended or nuclear, exogamous or endogamous with respect to the village, and monogamous or polygynous. Economic forms emphasize either fishing or agriculture. Property relations fluctuate markedly. No three villages share the same religious beliefs. Mutual aid extends beyond the economic sphere into quite different institutions. Governments differ in the manner of using formal councils, and chiefs are elected or hereditary. Stratification varies from mild to extreme. Schools are indigenous or imported, and socialization methods range from permissive to authoritarian patterns. In recreation, however, there was a stable core of festivals (including feasts), adult games, and music and diversity where dances, stories, and children's games appeared in the data. This diversity may be due more to a lack of evidence than to real differences.

The least degree of variation among the institutions is probably to be found in mutual aid, indigenous socialization, and recreation. On the other hand, important similarities are also present in familial and economic institutions (see Table 2). Stratification, government, and religion were most variable.

Reasoning from the premises that whatever is distinctive of villages is not likely to be most variable *and* least constant, then stratification, government, and religion, particularly, become improbable as distinctive features. This remark is not intended to mean that these institutions are not essential to the village. One is only saying that variation in these forms is so rife that it is difficult to isolate anything which the villages have in common. The institutions, of course, can be identified in each village. But in respect to each of these institutions, the villages show more differences than similarities. To phrase the matter more generally, the forms in which these institutions appear in the villages vary too widely upon too shallow a base to permit one to say with any degree of precision what roles they fill.

The familial and economic institutions stand in contrast. Though there were marked variations within each of these institutions, there was also a hard core in each from which there was no deviance. The

families in each village not only were economic units but also were found with a nucleus of biosocial practices (childrearing and sanctioned sexual relations) and the same basic membership structure of husband, wife, and children (polygyny was rare). The economic constant for all villages was that of primary production: More than half of the village population in each village was engaged in either agriculture or fishing or both. The presence of such constants were absent in the status structures, governments, and forms of worship. One may conclude, therefore, that if the family and economics show as much variation as the other three institutions, they also depart from those others in showing important features which were qualitatively constant.

The criteria of variation and similarities, then, do not automatically provide a synthesis. An infinite number of variations have actually been ruled out by applying the criterion of similarities to the various villages. What has been done by reapplying the criterion of variation has only been to indicate various areas which are not likely to yield fruitful results in attempts to synthesize a construct of villages. Neither criterion is infallible. It is conceivable that the most variable features among villages may well be their most distinctive features in a more general sense. The assumption is that such a condition is improbable, not impossible.

INTEGRATION OF THE MODEL

What construct, then, will enable one to synthesize or integrate the fifteen remaining elements (excluding the three institutions noted above)? The writer does not believe that any one construct will do the job perfectly. There is one, however, which appears useful. This formulation is given in the definition, below. The definition has been purposely restricted to its simplest possible form. Elaboration is a mistake committed too often in the process of defining. A definition is only an introduction. It is impossible to distill the essence of all that a thing is within a few words. Thus, in constructing the present definition, the writer attempted to include as many features as necessary and as few as possible.

With these considerations, the following construct is advanced: *The folk village is a localized system of co-operating families.*¹⁵ The folk village is, of course, more than this. To name only one of the more important features: the families co-operate in respect to eight institutionalized activities. But the village is *at least* this much, and from this type of introduction one may advance (as will be done)

¹⁵The delineative powers of this definition are admittedly limited. The definition is intended to be more ostensive or descriptive than classificatory. A true classificatory definition, i.e., one which relates the phenomenon to other pertinent phenomena and distinguishes it from these and from others, must await the development of an adequate classification of communities.

to the remaining elements which villages have in common. In the process of integrating the definition with the following material, the discussion will generally proceed according to the order in which the elements are mentioned in the model.

One of the most basic features of the folk village as a social system is found in the fact that interaction is primarily direct and face-to-face. One cannot be certain that everyone knows everyone else intimately, but this condition is approached. As a minimum, all strangers are recognized as such. According to the definition, the form of interaction most basic to the model is co-operation.¹⁶ The families may and do engage in other forms of interaction—they may compete, conflict, and so on—but co-operation is a common thread. It also extends beyond the sociobiological bases of kinship to the other institutions. The discussion at this point, however, concerns co-operation as a process. As such, the element involved is that of interaction. The institutionalized aspects of co-operation are discussed with mutual aid (see below). Note that the villagers may not necessarily love one another. That is another matter. The point to be made is that they co-operate, *not* that they like it.

The *locality* inhabited by the families is not always a single, contiguous area, but at any rate the area is integrated by the villagers into a unit. The integration takes place either politically or by common recognition that all territorial parts belong to the village. Further, there is but one location for the folk village, it is relatively permanent, and it displays certain spatial patterns, i.e., various services are clustered or nucleated in a given part of the village area. The vagueness of the village boundaries, however, attests to the lack of rigid patterning or complete integration.

None of the villages was isolated or self-sufficient in anything approaching an absolute sense. Large numbers of people left each of the villages for extended periods as well as for short trips. The village is in significant contact with other villages and with the larger society. Villagers, however, are slow to change their group membership. The village is used as a base of operations rather than as a place from which one may permanently move (though permanent moves do occur). In addition, the village is able to continue—to persist in time.

That families are aware of their membership in the village is shown by their recognition of a village name and a ruling body. They are also ethnocentric, though this sentiment is not confined only to the village. Mechanistic solidarity is revealed in the high proportion of persons native to the area, the importance of the family, and the dominance of the same rural occupation.

¹⁶Co-operation is used here in the sense of agreed-upon and joint action. It is to be distinguished from competition. Cf. Leonard Broom and Philip Selznick, *Sociology* (Evanston: Row Peterson, 1958), pp. 28-30. For a more complete discussion of co-operation, per se, see Smith, *op. cit.*, pp. 522-526.

The definition specifically mentions *familial* rather than individual co-operation. Such an emphasis does not deny that individuals co-operate—of course they do. But by far the most important form of co-operation is not that between individuals as individuals but between individuals as family members. Such a statement can be made even on the basis of incomplete data. There are several points to note. First, the family, not the individual, is the procreative, socializing, economic, and even the stratificatory unit. Second, evidence indicates that most or all adults are married (or have been) and probably none is without some village kinship ties. Third, though it is difficult to say which institutions are in fact more important to the continued existence of the village, one can gain a rough quantitative measure of such importance by noting the amount of time spent in certain institutionalized activities. Village members spend more time with their families and at their job than they do in connection with any other institution, and when one also adds time spent in socialization and as a member of a stratified position—both of which are family-based—then the role of the family as a time-occupier becomes at least equal to that of economic pursuits, if not actually supreme.¹⁷ Fourth, the individual cannot escape his kinship status in a social system where everyone or almost everyone knows everyone else. And finally, though data on the importance of the family have been limited to four of the eight institutions, the remainder are omitted only because information is not complete—not because it is contradictory. Consequently, it is the writer's contention that the basis of village co-operation is familial rather than individual.

Co-operation is most conspicuous among the institutions.¹⁸ The institutionalized form, mutual aid, is a collection of norms requiring village members to contribute aid among themselves. The reciprocity is diffuse in the sense that neither the object nor the means of co-operation is specified, nor is there calculation of specific remuneration. Rather, the normative element is found in the expectation of aid, itself, and in the further expectation that there are "no strings attached." As such, mutual aid exists in all the villages, particularly in connection with economic pursuits. However, for most of the vil-

¹⁷Since the economic institution is of such obvious importance in the folk village, one may wonder why this institution is not used as an integrating construct. The position taken here is that the specific type of economic behavior is secondary—whether fishing or agriculture. The most important consideration is the means by which economic ends are reached: co-operation, and particularly mutual aid.

¹⁸An institution is defined simply as an organization of norms. When this definition is applied rigorously, certain practices come within its scope that are not usually considered to be institutions, such as mutual aid (norms requiring the contribution of aid—not always economic—without calculation of specific return) or stratification (norms producing and governing inequalities among families). For further development of this point, see Hillery, "A Critique of Selected Community Concepts," p. 238 n.

lages, mutual aid extends beyond the economic sphere into other institutions (the data are not clear for Shamirpet and Silwa). The institution is thus more than an economic one.

Co-operation as a process appears also in the institutions yet to be discussed, although it is difficult to attach to it the specific designation of mutual aid. There is never a case of a ruler who is unresponsive to the people. Some democratic processes are always at work. Differences are also turned to the end of co-operation. The upper strata are assigned roles of leadership and prestige in the community, even where differences between strata are weak. As strata become increasingly well-defined, solidarity becomes increasingly organic in that differing strata are given varying roles in the village to a greater and greater extent (mechanistic solidarity is always found in some segments of the village, however).

Religion and recreation are saved for final discussion because they contribute to the definition in its role as an integrating construct in important though in differing ways. Religion provides the negative test—what happens when co-operation is actively denied? The two most important cases are Hilltown and San Ildefonso. In both there was a religious schism and in both the integration of the village was severely threatened. In San Ildefonso, the schism spread to the governmental institution and to the location of family residences. The village was in the process (though not complete) of splitting apart. The incompleteness of the split is to be noted. Much, even most, of the religious and political co-operation between the two emerging factions was destroyed. Indeed, the factions were defined by their lack of co-operation in these areas. In spite of this separation, however, there was occasional co-operation not only in religion and politics but in other institutional behavior as well. Thus San Ildefonso was in the process of becoming two villages because of a restructuring of the channels through which co-operation functioned.

In the folk village of nineteenth-century Hilltown, the religious schism between the Unitarians and the Congregationalists was prevented from severely affecting the political sphere through a tradition of majority rule. Although antagonism existed between the sects, one sect gained control of the governmental machinery, and the other recognized and acquiesced in that control. Nevertheless, antagonism not only developed but also survived even until modern times among the remaining members of both groups. Although one must not be hasty in making causal connections, it is significant that rather early in the twentieth century, Hilltown was in a discernable state of disorganization. In fact, the population of the village began declining a little more than two decades after the schism. Today, Hilltown is no more than a suburb of nearby industrial cities. Although it once

did fit the model, it now does not and thus at present cannot be given the designation of "folk village."

The time lag—if the suggested connection does in fact exist—should not be surprising. The evident rift in San Ildefonso has been in the making for twenty years. The islanders of Romonom witnessed a similar schism (this time political), a schism which had largely but not completely healed, but which had occurred almost fifty years prior to the time of their study. And neither of these villages had developed the elaborate mechanism for adjusting to and living with disagreement as had Hilltown. A folk village is a thing composed of many interlocking parts. To judge from the evidence offered in these paragraphs, if one part is damaged, the whole can be seriously threatened. But the full repercussions are slow to take their effect.

The discussion here is not referring simply to the development of heterogeneity in the folk village. Instead, reference is to the existence of negative sanctions to co-operation. The cases given are those in which co-operation between the parts is denied and prohibited. Shamirpet provides a different case, one of neutral sanctions. The village, predominantly Hindu, includes a Muslim minority (comprising about one-tenth of the population). Co-operation is not enjoined, but neither is there antagonism. Shamirpet, then, furnishes a case in which there is no religious co-operation with one of its parts, but the part is a minor one and neither is there antagonism. The village shows no tendencies toward disintegration.

Of course, it is not *religious* co-operation which is so important. The thesis maintains that the folk village itself is a social system which is built on co-operation in general. Religion has been discussed because it provides an important instance of possible consequences of failure in co-operation. Loss of co-operation, further, is not the only cause of village disintegration. Kaihsienkung was destroyed by the Japanese. Even in Hilltown, one cannot be certain that the unhealed religious schism was the decisive factor. One only knows that the schism began before disintegration and continued through the disintegration.

Recreation provides evidence of another kind. Far from affording instances of disruption, this behavior in its institutionalized aspects is one of the more consistently patterned and cohesive forms appearing in the villages. Never is it absent, including those instances where it is disfavored (as it is in Silwa). Several varieties are common to all the villages. San Ildefonso again adds an important point: recreation furnished one of the notable occasions (mutual aid was the other) when the villagers forgot the quarrels associated with their schism.

These data suggest a possible role which recreation may fulfill,

though no definite conclusion can be reached merely on the basis of the present evidence. Perhaps the importance of recreation lies in its role as a stimulator of co-operation. Certainly one must co-operate to some extent in order to take part in group forms of recreation (the only forms discussed here), but the significance of recreation extends farther. Recreation makes co-operation definitely a pleasant affair. Institutionalized play may be the stimulus, therefore, which the folk villagers use (or need) in order to keep at peak efficiency that form of interaction which we label co-operation and which is apparently so important to their existence.

CONCLUSIONS AND IMPLICATIONS

The findings described have serious implications for the study of community in at least two ways. In the writer's opinion, the most important potential use of the folk village is as a limiting case in the refinement of community theory. The full implications of this statement are beyond the task of this paper, but the task would not be complete without alluding to some of them. One cannot, on the basis of what has been done here, describe the nature of community. The emphases of some theorists—in particular, Toennies, Sorokin, and Redfield—seem justified by the findings, but one must quickly add even for these scholars, "so far." On the other hand, the folk village stands as a warning that one cannot always trust a priori conclusions concerning what is and is not a part of community. The position of some that the community is a collection of individuals,¹⁹ for example, must now be placed in the class of "not necessarily so." The units of which at least some communities are built are families rather than individuals (the folk village, in the present instance). Similarly, the fact that folk villages are not always composed of contiguous territory and that they lack definite boundaries shows, to the author at any rate, that space and distance are limiting factors, not ultimate determinants. Such a conclusion may appear obvious after it has been stated. But one might easily be led to the opposite conclusion in the face of other assertions that "the" community is a thing of contiguous area²⁰ and definite limits.²¹

¹⁹This emphasis is the most common of those which are at best misleading. In a sample of 94 definitions collected by the writer (see Hillery, "Definitions of Community"), 12 writers defined the community as some collection or group of "individuals." Many more definitions (36) were content to employ the terms "population," "people," or "persons," without indicating that families could also form the basis of some communities. On the other hand, at least seven definitions did specify the family as one of the possible building blocks of community. In this connection, see also Amos H. Hawley, *Human Ecology* (New York: Ronald Press, 1950), ch. 12.

²⁰See the references given in Hillery, "Definitions of Community," for L. O. Lantis (1930), L. D. Osborn and M. H. Neumeyer (1933), and L. A. Cook (1938).

²¹Only E. deS. Brunner (1927) specifically qualified the community as having "definite geographic limits." At least nine other definitions, however, described

The model of the folk village is, thus, a core of fact from which it is possible to work. Whether it is "new" is irrelevant. Nothing is ever really new. Whether all the elements are equally "important" or not is equally irrelevant. The claims and counterclaims about what is "important" to the community should serve as a persistent reminder that it is wiser to find out what is, first, and then decide what is important. The model of the folk village is more significant as a thing documented. With it, it is possible to point to what is meant. Community theory could profit thereby.

The work offered here has also another important use: helping to articulate data and theory. The high degree of resemblance between the folk village and Redfield's folk society was mentioned briefly in the beginning of the discussion. This agreement was so close that it prompted the name given to the folk village. There are differences, to be sure,²² but the differences probably arise from the status of the folk village as an empirical abstraction, in contrast to the folk society as an ideal type. The nature of this difference is important. Generalizations concerning the folk village apply to each of the ten social systems employed in building the model. Therefore, one is not required, as is true with Redfield's ideal type, to make allowances for the fact that no society fits the description. There *are* societies which fit the description of the folk village. Such an empirical abstraction thus permits one to maximize the sensitivity of theory to data. This condition is at times impossible to realize when one works with the folk society.

Of course, an empirical abstraction cannot replace an ideal type, and no such plea is intended. The discussion, rather, is designed to show that the descriptive theory furnished by the model of the folk village is an empirical approximation to the ideal type, a theory of a higher level of abstraction. A chain of links is established, from raw data to case study to theoretical model (empirical abstraction) to ideal type. The model of the folk village in this manner provides a necessary link from raw data to a relatively highly generalized theoretical formulation—the ideal-typical folk society. To the extent that such linkages are completed, to that extent is the study of community afforded a more stable foundation.

the community as occupying a "definite," "prescribed," "limited," or "specified" area. See *ibid.*

²²An extended discussion of the relation between the folk village and the folk society would take the discussion too far astray. Briefly, there are three areas of divergence: the folk village shows organic solidarity, some degree of literacy, and an enhancement (though hardly a dominance) of the market place, in contrast to the absence of these traits in the folk society.

EDWARD HASSINGER

Social Relations between Centralized and Local Social Systems

A manifestation of changing American rural society is the closer integration of rural and urban social systems. Under such conditions, it appears that the relationships of urban and rural social systems are crucial to understanding contemporary rural society. For example, a substantial part of our current "rural problems" may be viewed in terms of adjustment to American secular society. Considerations of this kind direct attention to the relationships of centralized and local social systems and particularly to the manner in which these types of systems are linked. In this, bureaucratic organization must be taken into account as well as the local structure. Mechanisms of linking centralized and local systems are considered in some detail including local advisory committees, voluntary associations, and surveys.

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RURAL sociologists, when they have considered the relationship of urban and rural society, have emphasized urban-rural differences. The realization that differences were a matter of degree and not kind led to the employment of the rural-urban continuum. But this too was based upon perceivable differences, and the narrowing of social (including economic) differences has reduced the efficacy of this approach.

INTEGRATION OF RURAL AND URBAN SOCIETY

An inescapable conclusion to the observer of American society is the integration of rural and urban social systems.¹ Instead of two societies

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¹"Farming is being interlaced tighter and tighter, in terms of interdependence, with other sectors of the economy" (Earl O. Heady and Joseph Ackerman, "Farm

side-by-side in some kind of mechanical relationship, we have one society with urban and rural systems in integrated relationship. And to be sure many systems cut across any common definition of urban and rural. Much of the rural-urban comparison has been essentially cultural analysis, that is, the effort to describe and compare the cultures of two societies. If we are dealing with the components of one society, then it would appear that the relationship among the components would be a proper approach. This would emphasize an interaction frame of reference.²

ADJUSTMENT TO THE LARGER SOCIETY

The relationship of rural and urban systems in a single society is related to the value-orientation of that society. This discussion assumes that American society may be characterized as secular. Howard Becker says, "A secular society is one in which resistance to change is at a minimum."³ Among the characteristics of a secular society that Becker lists are: accessibility, advanced communication, open-mindedness, the breakdown of kinship relations, specialization in occupations, technical education, the diminished importance of locality ties, and the prestige of science.⁴ Many rural problems may be seen in terms of adjustment to a secular society. According to Olaf Larson, "The central rural-centered problem in American society is that of adjustment to rapid cultural changes associated especially with the complex of impersonal forces represented by science and technology."⁵ Elements of rural society are not only attempting to catch up but also attempting to overtake a fast moving society. For example, rural education programs have improved greatly as manifested by consolidation, building programs, up-grading personnel requirements, and the number attending school. But when viewed against the standards suggested in the Conant report⁶ (which some schools meet) the gap

Adjustment Problems: Their Cause and Nature and Their Importance to Sociologists," *Rural Sociology in a Changing Economy* [report of a seminar of the North-Central Regional Rural Sociology Committee], Dept. of Agricultural Economics, University of Illinois, Urbana, November 13, 1958 [mimeographed], p. 7; see also, Harold Hoffsommer, "Rural Sociological Intradisciplinary Relations with the Field of Sociology," *Rural Sociology*, XXV [1960], 175-196).

³The outline of this discussion is similar in some ways to three research problems that Christopher Sower and Walter Freeman suggest ("Involvement in Community Development," *Rural Sociology*, XXIII [1958], 32-33).

⁴Howard Becker, *Through Values to Social Interpretation* (Durham, North Carolina: Duke University Press, 1950), p. 67.

⁵*Ibid.*, pp. 68-73.

⁶Olaf Larson, *Rural-Centered Problems in American Society*, from a talk to the seminar of extension workers, this statement taken from a mimeographed copy of the talk dated August 28, 1959.

⁷James B. Conant, *The American High School Today* (New York: McGraw-Hill, 1959).

is wide and rural schools will have to make even greater improvements to maintain their position relative to urban and especially suburban schools.

As long as rural society was a world apart, low farm income was not thought to be a national responsibility, but with the integration of rural and urban society, deprivation was not as acceptable. Observing dissatisfaction even though farm people have a higher income than ever before, Lauren Soth comments that, "The nonmonetary rewards of farming are not held in as high esteem as they once were. Farm people are not willing to put up with the traditional disparity between farm and nonfarm incomes, and society as a whole tends to agree with this view."⁷ On the same point, Carl Taylor's most refined hypothesis concerning the American Farmers' Movement is that it "grew out of and has been continued by the more or less organized efforts of farmers either to protect themselves against the impact of the evolving commercial-capitalist economy or to catch step with it."⁸

Examples could be extended using the church, government, and health and welfare agencies to illustrate that the strain of rural systems to adjust to a secular society forms the basis for some of the most obvious rural social problems.

CENTRALIZATION OF DECISION MAKING

Characteristic of secular society is great complexity based on a division of labor among its component parts. Such complexity demands high integration and co-ordination to keep the system running effectively. This is consistent with the long-term trend in American society toward centralization of authority to make decisions and utilization of rational means for implementing programs—the latter through bureaucratic organization. The centralization of authority means that decisions concerning rural areas are made to an increasing extent outside of rural areas.⁹

As a result of centralized decision making and rational implementation of programs, many standard programs for categories of people have developed, providing some justification for the statement that we are living in an IBM age. For example, the OASDI program covers those who meet certain requirements as to age, disability, and work history.

⁷Lauren Soth, *Farm Trouble* (Princeton: Princeton University Press, 1957), pp. 43-44.

⁸Carl C. Taylor, *The Farmers' Movement 1620-1920* (New York: American Book Company, 1953), p. 495.

⁹See, for example, Arthur J. Vidich and Joseph Bensman, *Small Town in Mass Society* (Princeton: Princeton University Press, 1958), "Those factors which appear to be decisive in determining the action of the rural community are factors which originate in areas outside the rural community," p. 105.

Unless centralized systems are taken into account, some behavior patterns are incomprehensible. This is illustrated in a study of polio immunization made in Georgia, where it was found that "those with low socioeconomic scores were immunized in greater numbers than those with high; open-country residents were vaccinated in greater numbers than those living in towns; and nonwhites had a greater percentage receiving the polio injections than whites." The author comments, "This difference by color was most unexpected. In the counties where the samples were taken the Negroes had less education, lower income, and lower socioeconomic status, were more often renters, and were more rural than whites."¹⁰ Part of the explanation seems to lie in the "leveling effect" of public health programs for whites and nonwhite categories. Without a public health program it is unlikely that the Negroes would have compared so favorably.¹¹ In North Carolina it was described as "of course, an unexpected finding" that nonwhites scored about the same (slightly higher) as whites on an index of recommended health care measures. The items in the index were heavily weighted with public health practices.¹²

We may also misinterpret relationships between behavior and socioeconomic variables unless we take organizational factors into account. Farm families are greatly underrepresented in the possession of health insurance. Here is a rural-urban difference that is real. We may seek explanations about differences in outlook or perhaps in income which would correlate. But the better explanation is that industrial workers are insured almost automatically through employee groups, and farm workers do not have this organizational mechanism.¹³

BUREAUCRATIC ORGANIZATION

If rural areas are affected crucially by centralized organization, then it is important to know something about the organizations themselves. Modern society has been accompanied by the high development of bureaucratic organization, this in industry, religion, education, and especially government. The centralized systems we have been discussing assume bureaucratic organization.

Max Weber has been the wellspring for many ideas concerning bureaucratic organization. He says, "The decisive reason for the advance of bureaucratic organization has always been its purely tech-

¹⁰John C. Belcher, "Acceptance of the Salk Polio Vaccine," *Rural Sociology*, XXIII (1958), 161.

¹¹*Ibid.*, p. 164.

¹²Sheldon G. Lowry, Selz C. Mayo, and Donald G. Hay, "Factors Associated with the Acceptance of Health Care Practices among Rural Families," *Rural Sociology*, XXIII (1958), 198-202.

¹³Edward Hassinger and Robert L. McNamara, *Charges for Health Services in a Northwest Missouri County* (Missouri Agr. Exp. Sta. Res. Bull. 721; Columbia, 1960).

nical superiority over other forms of organization. The fully developed bureaucratic mechanism compares with other organizations exactly as does the machine with the nonmechanical modes of production."¹⁴ Under such a rule the technical expert becomes a central figure; this can be observed in rural locales. It is especially apparent because of the sharp contrast to traditional self-sufficiency in rural areas. Thus in rural areas we observe, among others, social security programs, agricultural stabilization programs, extension programs, public health programs, and conservation programs which are bureaucratically organized and directed by experts.

Recent empirical studies of bureaucratic organization indicate that interpersonal relations modify the impersonal characteristics of bureaucratic organization and that the social milieu in which the organization functions affects the outcome.¹⁵ Francis and Stone say, "It seems reasonable to assume that the bureaucratic mode of organization is necessary for large, complex organizations, but it does not follow from this that the cultural setting of such organizations does not affect the conduct of the members."¹⁶ These studies indicate that although there is a general bureaucratic principle in large-scale organization there is also variation.

To understand what is happening in rural areas we must take into account the decisions of centralized agencies and their bureaucratic organization. To neglect the relationships with the larger society would be analogous to the agricultural economist terminating his analysis of the market system with the local buyer. The studies of bureaucratic organization, however, indicate that large organizations are not identical in their underlying processes and structure and that individual analyses of bureaucratic organizations are in order. We need to know about the organization of, for example, the Department of Agriculture, extension programs of state universities, farm organizations and co-operatives, and health and welfare organizations. This should include the informal and the formal structuring of these organizations as well as their articulation with local systems. Examples of this type of analysis are Philip Selznick's *TVA and the Grass Roots*, Charles Hardin's *The Politics of Agriculture*, and Edward Banfield's *Government Project*.¹⁷

¹⁴H. H. Greth and C. Wright Mills, *From Max Weber: Essays in Sociology* (New York: Oxford University Press, 1946), p. 214.

¹⁵Peter M. Blau, *The Dynamics of Bureaucracy* (Chicago: University of Chicago Press, 1955); Alvin W. Gouldner, *Patterns of Industrial Bureaucracy* (Glencoe, Ill.: Free Press, 1954); Roy G. Francis and Robert C. Stone, *Service and Procedure in Bureaucracy* (Minneapolis: University of Minnesota Press, 1956).

¹⁶Francis and Stone, *op. cit.*, p. 133.

¹⁷Philip Selznick, *TVA and the Grass Roots* (Berkeley and Los Angeles: University of California Press, 1953); Charles M. Hardin, *The Politics of Agriculture* (Glencoe, Ill.: Free Press, 1952); Edward C. Banfield, *Government Project* (Glencoe, Ill.: Free Press, 1951).

STRUCTURE AT THE LOCAL LEVEL

We have tried to show that rural social systems can be analyzed without regard for external systems only by omitting important considerations. However, in analyzing the relationship between central and local systems, a parallel case can be made for the necessity of taking the variation of local structure into account. Local social systems provide a set of norms that are used to evaluate relationships with external systems. They also are ready-made systems of communication. Neal Gross compared four communities that had been previously analyzed in research sponsored by the U. S. Department of Agriculture in the Culture in Contemporary Rural Life Series. There was great variation among the communities, which Gross saw as the degree of isolation from the larger society. For example, because of their isolation, El Cerrito, New Mexico, and the Old Amish of Lancaster County, Pennsylvania, were not sensitive to the larger society; on the other hand, Irwin, Iowa, and Sublette, Kansas, were.¹⁸ Cecil Gregory delineated rural social areas in Missouri and contrasted them with the structure of the larger society. He found the north and west area of the state in harmony with universal achievement orientation of the larger society, but that the Ozark area was not.¹⁹ The implication is that these areas would react differently to external programs because of their existing orientation.

Paul Miller found that the decision-making processes concerning hospital construction and public health departments differed according to area. "The Southeast and Midstate cases were distinctly oriented to the county as the prime area for decision-making" and "the jurisdiction of the county was completely by-passed in Noreast, as the business complex of the city successfully engineered a professional campaign to raise sufficient funds."²⁰

These are examples of local or regional orientation that influence relationships of centralized and local systems. Account must also be taken of the structure of specific local systems. Probably the most salient element at the local level is the power structure. Research by Hunter and others assures us that community power structure exists and is of consequence.²¹ In Springdale (*Small Town in Mass Society*),

¹⁸Neal Gross, "Sociological Variation in Contemporary Rural Life," *Rural Sociology*, XIII (1948), 256-269.

¹⁹Cecil L. Gregory, *Rural Social Areas in Missouri* (Missouri Agr. Exp. Sta. Res. Bull. 665; Columbia, 1958), pp. 51-56.

²⁰Paul Miller, *Community Health Action* (East Lansing: Michigan State College Press, 1953), p. 161.

²¹Floyd Hunter, *Community Power Structure* (Chapel Hill: University of North Carolina Press, 1953); Delbert C. Miller, "Decision-Making Cliques in Community Power Structures: A Comparative Study of an American and an English City," *American Journal of Sociology*, LXIV (1958), 299-310; Robert O. Schulze and Leonard U. Blumberg, "The Determination of Local Power Elites," *American Journal of Sociology*, LXIII (1957), 290-296.

four men were general leaders: "One or more of these men sits on the board of directors of almost every organization in town, from the cemetery association to the telephone company." One of the four general leaders is more specialized; "his specialization lies in his connection with outside agencies."²²

FUNCTION OF INTERMEDIATE SOCIAL STRUCTURE

The interposition of locality and other intermediary social systems between centers of power and the individual or family is seen by some to be an important element in democratic society.²³ William Kornhauser draws a distinction between totalitarian and mass society on one hand and pluralist and communal society on the other on the basis of the availability of the nonelites to elites.²⁴ It is Kornhauser's thesis that "meaningful and effective participation in the larger society requires a structure of groups intermediate between the family and the nation; and the weakness of such a structure creates a vulnerability to mass movements."²⁵ He further points out that one of the reasons farmers have been susceptible to mass movements is the insufficient intermediate structure.²⁶

Edward Banfield observed a farm village in southern Italy where there was no effective local organization above the nuclear family level. His central hypothesis was that people acted as if they were following the rule to "maximize the material, short-run advantages of the nuclear family; assume that others will do likewise."²⁷ This created an atomized society of nuclear families. As Banfield saw it, people were concerned with public affairs only in regard to their own short-range material gains, were susceptible to totalitarian regimes, and were politically unstable. Under such conditions outside agencies (church and state) were distrusted but not mediated in any concerted way. If the Kornhauser analysis²⁸ is correct, this village would have been ripe for some "mass movement," and in fact, according to Banfield,²⁹ fascism appealed to many.

LINKAGE OF CENTRALIZED AND LOCAL SYSTEMS

The articulation of local and centralized systems, it would appear, is an area of crucial importance. The interaction between these types

²²Vidich and Bensman, *op. cit.*, p. 259.

²³Baker Brownell, *The Human Community* (New York: Harper, 1950).

²⁴William Kornhauser, *The Politics of Mass Society* (Glencoe, Ill.: Free Press, 1959), p. 40.

²⁵*Ibid.*, p. 90.

²⁶*Ibid.*, pp. 207-210.

²⁷Edward C. Banfield, *The Moral Basis of a Backward Society* (Glencoe, Ill.: Free Press, 1958), p. 85.

²⁸Kornhauser distinguishes between a mass society and a totalitarian society on the basis of accessibility of nonelites to elites, but mass society is susceptible to becoming a totalitarian society.

²⁹Banfield, *op. cit.*, pp. 96-98.

of systems is not random, but like any integrated relationship has functional and positional regularity. Generally speaking, centralized systems are dominant and implementing; the local systems subordinate and receivers of action. Loomis³⁰ uses the concept systemic linkage to analyze the interaction among social systems and that term is applicable to the present discussion.

LINKING ROLES

Central systems often depend heavily on the mass media to reach the intended population. Much of this effort comes under the heading of education and public relations. Messages may be directed to individuals or families as units of a "mass society." In many cases, however, the audience of the mass media is locally structured so that, for example, a message that reaches a farmer may have a compound and selective effect at the local level through a network of interpersonal relations.³¹ Elihu Katz has recently commented on the contribution of this aspect of the "diffusion of farm practices" literature to communications research, "Rural sociologists never assumed, as students of mass communication had, that their respondents did not talk to each other."³² Regardless of the character of the local audience, there is a huge battery of personnel whose main function is to instruct, persuade, cajole, inform, and promote through the several means of mass communication.

Some activities at the local level are principally linking in nature. The complexity of legal regulations, for example, provides lawyers with the opportunity for such activities. In the functioning of a New York village board, "no action is possible without the assistance of the legal counsel. Moreover, the counsel is the only individual competent to conduct a correspondence with the state and other agencies with which the village must do business."³³ Linking activities are also performed by the county agent, director of welfare, clergy, school superintendent, and others. Thus linking becomes an important aspect in many occupational roles, and some occupations may be characterized as predominantly linking occupations.

LINKING MECHANISMS

Attention is now directed to some of the mechanisms used to link central and local systems. In analyzing the adjustment of the TVA

³⁰Charles P. Loomis, "Systemic Linkage of El Cerrito," *Rural Sociology*, XXIV (1959), 54-57 (see footnote No. 2 for a development of the term). See also, Charles P. Loomis and J. Allan Beegle, *Rural Sociology—The Strategy of Change* (Englewood Cliffs, N. J.: Prentice Hall, 1957), p. 19.

³¹Herbert F. Lionberger and C. Milton Coughenour, *Social Structure and Diffusion of Farm Information* (Missouri Agr. Exp. Sta. Res. Bull. 631; Columbia, 1957).

³²Elihu Katz, "Communication Research and the Image of Society: Convergence of Two Traditions," *American Journal of Sociology*, LXV (1959), 437.

³³Vidich and Bensman, *op. cit.*, p. 124.

to the existing structure in the area, Philip Selznick used the concept, co-optation. Co-optation is "the process of absorbing new elements... into the leadership or policy-determining structure of an organization as a means of averting threats to its stability."³⁴ A distinction was made by Selznick between formal and informal co-optation. Formal co-optation deals with legitimacy. It "involves the establishment of openly avowed and formally ordered relationships."³⁵ Informal co-optation may, for example, involve adjustment of outside agencies to centers of local power. Its focus is power rather than legitimacy.³⁶ Most situations involving systemic linkage contain elements of formal and informal co-optation, that is, both legitimacy and power. In the mechanisms of linkage described here we are dealing largely with formal co-optation devices. As such they are mechanisms for gaining support from the local power structure without appreciably altering the program of the central agency.

Local committees are widely used devices for linking central and local systems. For example, the Agricultural Stabilization and Conservation (ASC) county committees, in addition to their important administrative function, also link the national program to the locality through local people. The Agricultural Extension Service utilizes local advisory committees in program development. It is probably fair to say that a principal function of advisory groups is to link advisor and advisee. An underlying purpose of the central system is to receive support, perhaps in exchange for hearing advice.

Voluntary associations that support programs of centralized agencies at the local level are similar mechanisms. The Soil Conservation Service has developed support through the organization of soil conservation districts.³⁷ Perhaps the classic example of this type of support is the Farm Bureau-Extension Service relationship. In this case a linking-implementing mechanism grew to independent power.

Another linking mechanism quite different in form but perhaps similar in underlying purpose is the survey. This may be thought of as linking under the protective coloration of fact finding, which is an attractive quality in a secular-oriented society. Charles Hardin, for example, sees the soil survey and the resulting land-use capability tables as an integral part of the soil conservation ideology which provides an inevitable formula for action. The soil conservation ideology, according to Hardin, has the following elements among others:

"Soil erosion is a national menace."³⁸

"However, by a combination of dedication and science some men

³⁴Selznick, *op. cit.*, p. 13.

³⁵*Ibid.*, pp. 14-15.

³⁶*Ibid.*, p. 95.

³⁷*Loc. cit.*

³⁸Hardin, *op. cit.*, p. 89.

are competent to be custodians of the precarious balance which keeps the famous six inches of topsoil where it should be."³⁹

On the basis of the soil survey:

"Already the shape of technological perfection is at hand: 'the complete farm plan' and the 'land use capability tables.'"⁴⁰

"Thus every acre gets the treatment which it requires. There is an exact measure of good works which induces salvation."⁴¹

Thus the fact finding of the soil survey functions as a legitimating device as part of the soil conservation ideology. It would appear that the social survey has a parallel function in connection with the ideology of the "problem-solving process." The "problem-solving process" is approximately stated as (1) defining the problem, (2) obtaining facts, (3) developing a plan on the basis of facts, and (4) executing the plan. In some cases we may say of the problem-solving ideology as Hardin said of the soil conservation ideology that it "is held forth as absolutely the only path to grace."⁴² The social survey fulfills the second step of the above outline. It also provides an acceptable entrance for external agencies into a local situation. This, of course, is not a criticism of the survey technique but an observation of its function.

Another linking element is added when the survey is a self-survey in that there is greater local participation in obtaining "the facts." Fact finding was only one goal of a self-survey conducted in a Michigan county. For the Health Council, the goal was to revitalize that organization and provide an educational experience for the community;⁴³ for the Civil Defense Director the same self-survey was "a means of achieving his goal of establishing a county-wide civil defense organization."⁴⁴

The power relations of local systems and external agencies will not be developed at this time. There are, however, degrees of dominance by outside agencies, and the local power structure may significantly change the course of outside agencies. For illustration, we may turn again to Selznick's analysis of the TVA in relation to the local power structure. His conclusion was that the colleges of agriculture in the area, through the extension service, were able to influence the policy of TVA in ways that had not been anticipated.⁴⁵ In this case the program of the outside agency was altered in significant ways, the local power structure providing a buffer to direct manipulation.

³⁹*Ibid.*, p. 97.

⁴⁰*Ibid.*, p. 98.

⁴¹*Loc. cit.*

⁴²*Loc. cit.*

⁴³Christopher Sower, *et al.*, *Community Involvement* (Glencoe, Ill.: Free Press, 1957), p. 225.

⁴⁴*Ibid.*, p. 226.

⁴⁵Selznick, *op. cit.*, pp. 181-185.

SUMMARY

We have attempted to draw together some of the thinking and research relevant to the relationship of central and local social systems. In this discussion a basic assumption was that urban and rural social systems are rapidly becoming more closely integrated. Also the discussion was based on the proposition that American society is secular-oriented. In such a social context the relationship of central to local social systems becomes a crucial sociological problem. Attention must be given to the internal structure and functions of both the centralized systems and the local systems. For example, centralized systems have some general bureaucratic principles which are modified by informal relations within the organization. Likewise, it is a general rule that the power structure at the local level must be considered, but the type of power structure varies according to area and community. The mechanisms of linking central and local systems were given considerable attention. Advisory committees, voluntary associations, and social surveys may have the linkage of central and local systems as a major function by providing legitimate means of entrance into a community. The local power structure may substantially alter the program of the centralized agency in the linking process.

VICTOR GOLDKIND

Sociocultural Contrasts in Rural and Urban Settlement Types in Costa Rica

A typology is proposed for the classification of settlements in Costa Rica into distinct sociocultural types, only one of which is considered primarily rural. Common characterizations of Latin culture approach accuracy only for the urban types. Relatively small and remote villages serving mainly as marketing and administrative centers share many characteristics with relatively large urban centers and are thus classified as urban. The rural type is typically stratified into two main status groupings, the dominant one characterized by such "Puritanic" traits as frugality and a high evaluation of manual labor, the subordinate stratum being distinctive enough to constitute a subculture of its own.

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AN opportunity to study differences between rural and urban life in a setting in which rural society is relatively unchanged by the profound impact of modern industrial developments was presented to the writer during a stay of three years (1952-1955) in the country of Costa Rica. Costa Rica is small both in area and population and has a relatively simple and predominantly agricultural economy. The population is distributed in a relatively few distinct types of settlement, making it possible for a single observer to study and compare enough cases of each so that similarities and differences can be generalized about with some degree of confidence.¹

¹This approach allows for an analysis not available in the literature on Costa Rica. For example, the most up-to-date treatment of the country's population distribution is to be found in Robert E. Nunley, "The Distribution of Population in Costa Rica" (Ph.D. dissertation, University of Michigan, 1959). But little attention is given to social differences among settlement types. A treatment of the social life

Since the purpose of this paper is to contrast rural and urban patterns of life, the hacienda—which tends to combine both²—will not be treated. The main concern here is the comparison of hamlets composed of peasant farmers with the urban centers of the Central Plateau. Emerging from this analysis and noted in the concluding section is the fact that certain characteristics commonly attributed to Latin-American culture do not apply in Costa Rica to the hamlets but only to the urban centers.

THE SETTLEMENT TYPES

Politically Costa Rica is divided into seven provinces, four of which have part of their territories and provincial capitals on the Central Plateau, where some three-fourths of the total population resides. The provinces are divided into cantons, each of which also has a capital. The cantons are roughly equivalent to counties in the United States, the canton capitals corresponding to county seats. Each county is divided into districts. This political classification, with certain modifications, can also be considered the basis of a social one, classifying the country into distinct settlement-cultural types. This sociocultural classification, however, applies most consistently to the relatively unvarying ecological conditions of the long-settled Central Plateau and less to the relatively sparsely settled and undeveloped remainder of the country.

of the entire country is provided in John and Mavis Biesanz, *Costa Rican Life* (New York: Columbia University Press, 1944). But this work is strongest with respect to the larger urban centers, and suffers from a general orientation similar to that of urban professionals. Details of life and an analysis of social stratification in a large canton capital are presented in Sakari Sariola, *Social Class and Social Mobility in a Costa Rican Town* (Inter-American Institute of Agriculture Sciences Miscellaneous Publication No. 5, Published by the Scientific Communications Service; Turrialba, Costa Rica, 1954). For the treatment of various aspects of social life in a single canton, see Charles P. Loomis *et al.*, *Turrialba: Social Systems and the Introduction of Change* (Glencoe: Free Press, 1953), a work noteworthy for comparisons between peasant communities and haciendas in the same locality. In Philip L. Wagner, *Nicoya: A Cultural Geography* (University of California Publications in Geography, XII, No. 3; Berkeley, 1958), pp. 195-250, there is a short treatment of life in a region outside the Central Plateau. Richard N. Adams, "Cultural Components of Central America," *American Anthropologist*, LVIII (1956), 881-907, provides a cultural typology within which certain components apply to various segments of Costa Rican culture. None of these works attempt systematically to differentiate the sociocultural characteristics of distinct settlement types in the framework of the national society.

²*Plantation Systems of the New World: Papers and Discussion Summaries of the Seminar Held in San Juan, Puerto Rico* (Washington, D. C.: Pan American Union, General Secretariat, Organization of American States, 1959), throughout, but note pages 13-15, 136-144. Although data are lacking on haciendas, 1950 census data report that 52 per cent of the agricultural labor force (in May) worked without a wage on own or relative's land. From this and other indications, it seems likely that less than a fourth were employed on haciendas in Costa Rica.

The aforementioned districts in the various cantons have so much more in common in their way of life than any has with any canton capital, much less any larger urban center, that they can be designated as a distinct settlement type—the *district*. In the Central Plateau all the districts have sufficient population density and community organization to constitute what will be called *hamlets*, but this is not true in some of the regions remote from the Central Plateau. Similarly, the canton capitals tend to have more in common with each other than any has with either a hamlet or provincial capital. The canton capitals also may be considered to constitute a distinct settlement type—the *village*. Five of the country's seven provincial capitals likewise constitute a distinct type—the *town*. Of the other two provincial capitals, the capital of the province of Guanacaste, quite remote from the Central Plateau, is so small as to make it more like a village than a town, just as the distinctive ecology and history of this province make it quite different in many respects from most of the rest of the country. The provincial capital of San José is also the national capital and as such has certain unique characteristics which make it a distinct settlement-cultural type—Costa Rica's only *city*.³

Data from the Costa Rican Census of 1950⁴ can be interpreted to indicate that, of a total population of 800,875, the city of San José had a population of about 100,000, the towns ranged from 11,000 to 14,000, and the villages on the Central Plateau ranged from about 1,000 to 6,500, with most falling between 1,500 and 4,500. Villages off the Central Plateau varied from several hundred to the 4,300 of the Pacific port of Golfito, but most ranged from about 300 to 900. About 55 per cent of the total Costa Rican population lived in the districts, 20 per cent in the villages, 10 per cent in the towns, and 15 per cent in the city.

Estimates by the Costa Rican Bureau of the Census⁵ based on vital statistics indicate that by the end of 1959 the country's population had increased by some 43.4 per cent since May 1950 to 1,148,441, and

³Three years were spent in participant observation and conversation with Costa Ricans in all walks of life, approximately as follows: fourteen months in the metropolitan area of the national capital, two months in 4 provincial capitals, four months in some 36 villages, and sixteen months in some 15 rural districts. About a third of the time spent in villages was in one village, and nearly nine-tenths of the time spent in rural districts was in one district. Thanks for transportation to many parts of the country are due the Juntas Rurales de Crédito Agrícola del Banco Nacional, the Oficina de Café, and the Servicio Técnico Interamericana de Cooperación Agrícola (STICA), and especially the very dedicated local agents of these organizations.

⁴*Censo de población de Costa Rica al 22 de Mayo de 1950* (San José: Ministerio de Economía y Hacienda, Dirección General de Estadística y Censos, 1953). No later census has been conducted.

⁵*Estimación de la Población de Costa Rica al 31 de Diciembre de 1959* (San José: ministerio de Economía y Hacienda, Dirección General de Estadística y Censos, 1960).

that the common impression of great urban growth is substantiated. Metropolitan San José has become a population of some 200,000, the towns now range from 15,000 to 23,000, most of the villages of the Central Plateau now range from 2,000 to 9,000, and some of the canton capitals off the Plateau now number about 20,000. Nevertheless, because of the great total population growth, the rural districts seem to have maintained their proportionate share of the population. The urban population seems to have shifted somewhat to a greater representation in the larger urban centers, those with more than 5,000 population.

Accompanying the ordering of settlement types from the rural to the urban extremes—district, village, town, city—there tends to be an increasing concentration of population, wealth, technological development, occupational differentiation, nonagricultural activities, political authority and power, religious authority, educational facilities, health facilities, fertility control, prestige to residents, and almost any index of urbanism. But the biggest sociocultural gap on the rural-urban continuum in this series of settlement types is between the districts on the one hand and village, town, and city on the other. The latter three share certain distinguishing characteristics constituting the basic patterns of Costa Rican urban culture and will be called *urban centers*.⁶

*Unfortunately, the comparisons of certain characteristics presented in the 1950 census with respect to the one-third of the population classified as "urban" and the two-thirds classified as "rural" are based on socially unsatisfactory definitions of rural and urban. By the census definition, rural included, in addition to the people living in districts, a number of persons living in sections of villages (and two towns off the Central Plateau) which did not meet certain "objective criteria," such as a grid system of blocks and indoor plumbing and electricity. However, most or all of these people participate fully in the social and economic life of these urban centers, although some of them are relatively recent migrants from rural districts in the process of acculturation to urban life. A similar view is apparent in Morrison's discussion of census data on the urban center of Paraíso, "Classified as urban are 1,759 persons, but in addition to these, some 1,200 persons included in the rural group also reside in the town of Paraíso." Paul Cross Morrison, "Land Utilization, Cartago to Turrialba, Costa Rica," *Papers of the Michigan Academy of Science, Arts, and Letters*, XL (1955), 208.

Nevertheless, some of the data presented by the census are worthy of mention in that they show the usual kinds of differences found between rural and urban populations, despite the definitions employed. In the total population of Costa Rica there were 99.7 males per hundred females, in the rural population 107.0, in the urban 86.8. In the total population there were 739.2 children less than five years of age per thousand women aged 15 to 44, in the rural population there were 865.8, in the urban 542.8. In the total population there were 5.6 persons per family, in the rural 5.8, in the urban 5.3. Average grade of school completed in the total population age seven and above was 2.8, in the rural 2.2, in the urban 4.3. Of the total population age seven and above, 8.5 per cent had completed the sixth grade, in the rural population 3.9 per cent, in the urban 17.2 per cent. Percentage of the

SETTLEMENT PATTERNS

The settlement pattern of the village is ecologically based on a nucleus of a church (daily attended by a resident priest), a municipal building, a school, and various shops and government offices distributed around a central plaza which is also a park.⁷ The park and its benches serve as an important meeting place, although this is less true for town and city where commercial establishments and clubs become more important. The concentration of houses, shops, and offices, which are often in wall-to-wall contact, and the citylike blocks adjoining the central plaza of the village for a distance of several blocks in all directions is almost identical to many sections of a town or the city. By simply joining together several villages, something quite like a town would result. The town, however, has a few buildings larger than anything to be found in the village. The city has many buildings larger than anything to be found in the town, but nevertheless many of its residential areas could be mistaken for parts of a village or town. A larger proportion of the streets of city and town are paved than in the village, but the former also have their unpaved sections.

In the hamlet, houses are typically scattered, although many are distributed along the roads in relatively concentrated clusters (often associated with a general store). But there is always a good deal of space between houses (at least ten yards and usually more) even when they are most concentrated. There is usually some cultivation between houses, often along the roads. The roads are not laid out in a grid system with citylike blocks and intersecting streets. Houses tend to take the pattern of line villages, but with houses also scattered at some distance off the roads. Joining hamlets together would not produce any other settlement type, as in the case of the urban centers; indeed, the hamlets are joined together just as they are.

Furthermore, the hamlet lacks any building devoted exclusively to governmental function or to office work. There is no jailhouse, such as is found in all urban centers. The only shops are general stores, the owners of which usually also work at agriculture. There are no commercial establishments such as abound in all urban centers, where a person can go to be served food or drink to consume while seated at a table. There is no church (*iglesia*) attended by a resident priest, al-

total population age seven and above completing no grade of school was 23.8, in the rural population 30.7, in the urban population 17.2.

⁷This is exactly the pattern described by William Davidson, "Rural Latin American Culture," *Social Forces*, XXV (1947), 249, as "The Plaza System" typical of the Latin American community "in the rural phase of culture" (emphasis in the original). As noted in the concluding section of this paper, there seems to be some confusion in the literature as to what is rural and what is urban in Latin America.

though there is a small wooden church (*hermita*), such as exists in no urban center, where an image of the hamlet patron saint is kept, and where prayers are made, rosaries held, and where the priest holds services on his infrequent visits, rarely more than twice a year. There is no building housing a "social club," whose importance for the social life of the urban centers is discussed below.

Relative to the wealth of the respective dwellers, hamlet houses are less well constructed than those of any urban center, are less pretentious, and have fewer conveniences, e.g., few have internal toilets or electric light. More often than not there is neither electricity nor asphalted roads, both of which exist in and near all urban centers on the Central Plateau. Although the hamlet often has a school located near its small wooden church near a small field vaguely reminiscent of a plaza, this latter by no stretch of the imagination could be called a park, nor does it serve the same important social functions as the park in the urban center. The hamlet has no *retretas* such as occur in all urban centers: gatherings in the park several nights a week, with males and females walking around the park in opposite directions and greeting each other socially or romantically, often to the accompaniment of band music. Almost every urban center but no hamlet has its own band which gives periodic public concerts.

INTEGRATION INTO THE NATIONAL SOCIETY

The hamlet seems to be less well integrated into the national society than any other settlement type. With respect to political organization, the President, National Legislature, and Supreme Court (along with other courts) are located in the city in separate buildings. In a single building in the town we find the offices of the Provincial Governor, provincial courts, and the town council. In the municipal building of the village we find the offices of the canton mayor (*jefe politico*), judge (*alcalde*), and municipal council, all of whom have jurisdiction over the entire canton, including the rural districts. The mayor and judge have full-time positions and are usually men who are not from the local area and who are appointed officers of the national government in the city. The municipal council serves as the legislature for the entire canton, passes some local laws, and budgets what little money is available.

The only government official residing in the hamlet is the police agent (who sometimes has one or two paid assistants) selected by the mayor from recommendations of some of the wealthy hamlet families of the same political affiliation. Often the policeman is the poor or young relative of one of these families. But, although he receives a low salary, he is never a full-time policeman, always being largely involved in his own private economic activities. Only very rarely is

a man from a hamlet elected to the municipal council, and when this happens he is always outvoted by the majority of members who are from the village. There is even less chance for a hamlet resident to take effective part in the higher levels of government in town or city. Thus the rural population is not really effectively represented at any level of government, which explains much of the relatively unimproved condition of the country's rural areas. Municipal councils are apt to give higher priority to beautifying the village than providing adequate water supplies, electricity, or roads to hamlets.

This political system is maintained partially by the low evaluation which urban people place on rural people and because of the inferiority feelings which many rural people feel toward urban persons. But the organization of voting is also a factor: hamlets do not each vote for one of their residents to represent them in the council. Instead, each party picks a slate of candidates for the council, and the entire canton votes on them as a whole. The candidates, chosen by party leaders, are nearly always village residents, who are much more likely to be known over the whole canton than hamlet residents who must tend to their farming. No political movement or organization in Costa Rica has ever been initiated by rural people.

Many of the services provided by the government have their lowest echelon of organization located in the village, and the districts of the canton are serviced out of these village offices. The personnel of these offices are necessarily far more urban than rural in their background, education, outlook, social contacts, and values. As would be expected, there are often problems in communication between these agencies and their clients. The same can be said about the priest, who is also educated in urban centers, is resident in the village, must maintain good relations with at least some of the village "leading families," and visits hamlets relatively infrequently. Cathedrals with officiating bishops exist in some of the towns, and the Archbishop, the country's ranking prelate, officiates in the largest of the cathedrals, located in the city.

Probably the national organization most active on the rural scene is the school. The rural school teacher, however, usually shows signs of urban influence in both dress and behavior and is considered an outsider. Many hamlet schools do not offer the full six years of elementary education, and commuting to the village is necessary to finish elementary school. Many of the villages, in addition to having complete elementary schools of six grades, also provide the first few years of high school, which then must be completed in a town, where there are usually several high schools. In recent years some villages have established complete high schools. The city is the seat of the University of Costa Rica and many high schools.

INTERACTION AND OCCUPATION

One of the most striking differences between rural district and urban center is the much greater population density and rate of social interaction in the latter and the different quality of the interactions. Because the long-settled districts, especially in the Central Plateau, have relatively few immigrants whereas all urban centers have relatively many, a much larger proportion of the hamlet population has mutual kin or long-term friendship ties.

Practically everyone encountered in a hamlet works in, or is supported by work from, agriculture. The village serves as a marketing and trade center for the surrounding districts, and the buying and selling of goods and services predominates in importance over any production. Most workers in urban centers, at least on the Central Plateau, work mainly in nonagricultural jobs, which pay higher cash wages than does agricultural labor. Thus social and economic relationships of hamlet people are likely to be quite different from those of village residents, while those of the latter are much more like those of the larger urban centers.

In most districts there are few if any men engaged in nonagricultural activities on a full-time basis. And in most villages there are a number of occupations not usually found in a hamlet even on a part-time basis: doctor, lawyer, priest, governmental official (of higher rank than policeman), office worker, extension agent, store clerk (unrelated to the owner), restaurateur, hotel owner, baker, blacksmith, mechanic, gasoline station operator, electrician, bus driver, movie operator, tailor, shoemaker, market vendor, vendor of the national lottery, and so on. Although on the urban scene manual labor is primarily a characteristic of the lower class and is avoided as much as possible by others, this kind of work among rural people is seen as a necessary and respected part of earning a living from agriculture. Not at all unusual is it for the wealthiest of peasants to work alongside their hired laborers at the same tasks, and usually they work harder. A man working at agricultural labor is paid more for the most physically difficult tasks, whereas in an urban center these are the very jobs which receive the least pay. But urban workers receive higher wages for jobs comparable to those in agriculture even though these jobs, e.g., construction labor, have the least prestige in the urban world. A man working at the lowest paid level of nonmanual labor in an urban center, e.g., a store clerk, is paid several times what an agricultural laborer can earn.

There are many more wage-earning possibilities for women in urban centers than in hamlets, which, of course, explains the differential sex ratio noted in footnote 6. Urban centers offer employment to women with no education as domestic servants and prostitutes; for women

with some education there is office work, store work, and teaching. But only in teaching is there any real opportunity in rural areas.

SOCIAL STRATIFICATION

Lack of space prevents a detailed description of stratification differences in the urban population. But, briefly, the upper class is composed of families that either are or have been so wealthy as to be able to maintain the life of leisure and pleasant but expensive social activities that are the ideal of the good life for most urban people. In direct contrast to the upper class, middle-class families are supported by men and sometimes women in jobs which demand the daily presence of the worker; these jobs, in contrast to those of the lower class, require a minimum of manual labor. Middle-class incomes tend to be enough higher than those of the lower class so that members of the middle class often seem to be less concerned with providing themselves with the basic necessities than with attempting as far as possible to imitate the upper class style of life. Lower-class occupations usually involve manual labor with wages so low as to make the provision of the basic necessities to families a serious problem.

In general, the smaller the urban center the less wealthy the members of the local upper class, the smaller the middle class, and the less the social distance maintained between the upper and middle classes. In the village the middle class is so small that it is identified with the upper class in what is known in the village as the "social class." The term *class social* is used in all urban centers, but the larger the urban center the smaller the proportion of the middle class included. Those outside the "social class" are referred to as *el pueblo*, literally "the people," but members of the "social class" usually give invidious connotations to the term.

The center of social activities for the village "social class" is the "social club." In the larger urban centers there are also social clubs, and sometimes separate clubs for the lower class, although this is rare in villages. At the village social club, there is frequent informal dancing as well as formal dances held several times a year, the latter attended by all those who can procure the proper clothing and the price of a ticket, expensive even by city standards. Many relatively poor youths of the middle class go heavily into debt to obtain the necessary attire, and the strain on a man with several daughters may be severe. Each of these formal dances is attended by members of the "social class" of the villages and town of an entire region.

In a hamlet composed of peasant farmers, a relatively small number own large enough holdings to hire labor on a permanent basis, i.e., laborers who work and are paid a fixed wage every week of the year.

There are many more who farm using mainly family labor, supplementing this with the hiring of occasional labor on a daily or weekly basis, depending on the amount of cultivation, the crops cultivated, the time of the year, and the number of family workers. Among landowning farmers, those who own so little as to have to work themselves as part-time tenants or wage laborers are in the worst economic position, except as they may be relatives and especially heirs, of larger landowners. These poorer landowners are the most likely to turn for additional earnings to such part-time nonagricultural activities as operating a general store, oxcart hauling, making illegal liquor, or engaging in illegal cockfighting, activities which successful farmers tend to avoid and which require too much financial investment for the completely landless. Landless laborers may work as tenants or laborers who hire themselves out on a daily or weekly basis, or as laborers permanently attached to a relatively large-holding landowner with whom they may or may not have limited tenancy arrangements.

In most hamlets the farmers who own enough land to support their families and keep themselves entirely occupied without having to work with someone else as a tenant or for someone else as a laborer are outnumbered by those who are forced to choose one or both of the latter alternatives. But it is the heads of families with land sufficient to hire labor on a permanent, year-round basis who are the economic, social, and political leaders of the hamlet community. They hire most of the wage labor, lease out most of the land farmed in tenancy, engage in the most lucrative agricultural enterprises (which invariably require the greatest financial investment), most easily obtain the credit necessary for such enterprises, accumulate the most wealth, and are the most able and willing to buy up any land offered for sale. Other hamlet residents come to them for employment, tenancy arrangements, loans of money, help, and advice. In a rural economy where credit or loans are difficult and expensive to obtain, with opportunities for land ownership, tenancy, and employment decreasing, most people endeavor to remain on good terms with one or more of these "important families," often voting in elections in accordance with their wishes.

The biggest gap in social status in the peasant community is between those who own land, or grew up in landowning families, and those who are removed from land ownership by two or more generations. Those who are landless themselves but grew up in families in which their fathers farmed at least some land of their own tend to attempt to work their way up the agricultural ladder by engaging in commercial tenancy, i.e., tenancy operations large enough to assure some cash profit over and above subsistence needs. Although there are exceptions, notably among the spoiled youngest sons of wealthy farmers, most persons growing up in families in which fathers managed their

own agricultural enterprises tend to be industrious, responsible, and ambitious with respect to work and land ownership, in sharp contrast to those whose fathers were mere wage earners.

The landless farmer who engages in commercial tenancy is likely to be the son of a landowning farmer, and to display the traits just cited. He is likely to be treated as a social equal by even the wealthiest of peasant landowners. (But he is not likely to marry into a family more wealthy than that of a small landowner.) Thus the largest and dominant status group in the hamlet, equivalent to the urban "social class," ranges from the wealthiest peasant families, through small landholders, to include on its lowest levels the families of landless commercial tenants. These are the people who carry on their economic enterprises with some degree of satisfaction, aspire to better their economic situation, and have at least a possibility of doing so and accumulating some wealth. They constitute an in-group in which there are many kin and marriage ties and which feels itself to be the hamlet community. It is members of this group who organize and participate in the yearly round of religious services, school activities, fiestas, and other community activities. They discuss national and international politics and sports (especially soccer), subscribe to or read newspapers and discuss what is in them, own or listen to other people's battery radios, and provide the young men who play together at soccer. Although both friendships and hatreds exist among the members of this group, they all recognize and define each other as personalities of fundamentally equal dignity, people treated differently by circumstances perhaps, but people who are basically alike.

Not so with respect to the remainder of the hamlet community, the landless laborers and subsistence tenants, who may constitute a third or more of the total hamlet population. These are not regarded by members of the dominant status group as personalities of equal human dignity, and their different behavior and values mark them as a different kind of people. It is true that they have far fewer kin and marriage ties to other hamlet families than do the families of the dominant group, especially those who own land. But their socio-cultural distinctiveness is explainable in terms of their economic situation: their difficulty in eking out a bare existence leaves them little or no hope for future betterment. Returns from wages or subsistence tenancy are barely enough to provide the basic necessities at a very low level of living. These activities no longer can provide the possibility of accumulating sufficient wealth to buy land, as they did several decades ago when land was cheap and fewer people were competing for it. Thus these people tend to place value on what can be of some immediate use in their continuous desperate struggle for the bare necessities. They tend to be "lazy" and "irresponsible" in the face of circumstances which might reward them only at some

distant future time, and hunger in the present can make the "distant future" a matter of days. Many obviously suffer from malnutrition and are so weak that they cannot do a good day's work, according to their employers. In a tropical agriculture which is highly seasonal in its work demands, they are the last to be hired and the first to be fired, and they are paid less for the work they do because they do it less well and more slowly.

These people are the least educated and cannot maintain a conversation with members of the dominant group about politics, sports, or other favorite subjects of the latter. Often they seem not to understand the conversation of their "betters," almost as though they were mentally retarded. But observation of the conversation they have among themselves soon dispels that notion. They are the least familiar with urban ways, which usually require money for satisfactory participation. These people tend to avoid most religious services and other community activities, except for the fiesta of the hamlet patron saint, probably because they lack the clothing and money to participate in them properly.

The informal groupings of men from landowning and commercial tenant families which meet in the roads and general stores almost every afternoon and evening for talk and drink usually exclude these men, although sometimes a few are present, silent onlookers seated apart. Members of the dominant group tend to regard these people as inferior beings and treat them accordingly, which in turn they realize and profoundly resent. For example, while old men of landowning families are always treated with great respect, old men of these landless poor families are often baited and mocked by young men of the dominant group.

The well-known dominance of husbands over wives in Latin culture is infrequent in these poor rural families. This is also explainable in terms of a response to economic conditions. A man in these circumstances can contribute to his family only a low wage or share of subsistence tenancy—by no means always obtainable—of little more worth than the woman's contribution of labor, gathering of fruits and vegetables, and occasional cash income from selling eggs and working at agricultural labor herself. Such a wife risks little in the loss of her husband's contribution, which is no better than that available from almost any working man. And on the rural scene, where there tend to be fewer women than men, and the services provided by women are not available commercially as in urban centers, it is easy for almost any woman to find at least a poor laborer who is willing to establish a household with her. Thus there is little compulsion for a wife to be submissive in these families, and husband-wife relations are much more egalitarian than in wealthier families. When a man has the

relatively large and certain income obtainable from landownership or, to a lesser extent, commercial tenancy, the wife stands to lose a good deal economically in the loss of her husband. Remarriage to a man of equal wealth is most unlikely, men of landowning families usually requiring both youthfulness and virginity in a bride. Most wives of such men are far more submissive and subject to the control of their husbands than is the case among most urban families.

Not only must the poor landless laborer contend with a wife who is not submissive, but he is often in no position to insist on virginity in his bride. And he may have to accept a woman who already has children by other men. But he usually considers himself lucky to have any woman share his life, and many of these men do not obtain any on a permanent basis. They become completely isolated from family life and wander about completely alone in the world.

ATTITUDES AND VALUES

On the scale of increasing urbanism—district, village, town, city—the residents of one settlement type tend to feel *orgullo*, haughty superiority, toward the residents of more rural settlement types, and the latter feel *vergüenza*, the shame of inferiority, toward the former. But the greatest feelings of respective superiority-inferiority are manifested between the urban centers on the one hand and the rural districts on the other. Expression of these attitudes is commonly encountered; e.g., the term *concho*, frequently used to refer to rural people disparagingly, also connotes, and may be used to mean only, an impolite, uncultured boor.

As indicated previously, industriousness at physical labor is greatly admired in the district, while it brings loss of prestige in urban centers. One of the most frequent and important evaluations of a person expressed by rural people is the extent of his steady dedication to the physical tasks which make up so much of farm life for both men and women. Rural people tend to regard most urban employment that is not manual labor as not really work at all, and vastly overpaid. They are especially skeptical about office work. They express contempt for the typical urban woman of respectability, whom they view as managing her household with servants doing all the work while she takes life easy, with a great deal of leisure time for a great deal of immorality. Wives in the hamlet must spend nearly all their time at the tasks always so time-consuming in farm households without such conveniences as electricity, gas, and hot running water. When a young man begins looking for a wife, among the virtues he is very much concerned with is her devotion to work. The comment is common among rural people that a man who lives in a hamlet is foolish to marry a girl from a village because she does not know how or wish

to work the way a hamlet girl does. An old tradition, now largely extinct, required a symbolic demonstration of industriousness by both parties to a formal courtship. The boy had to present to the girl's father a large quantity of firewood he had picked, while the girl had to present the boy with a large quantity of *tortillas* she had made from corn she herself had ground and prepared.

The urban man is judged by his fellows to a great extent by the way he dresses and spends money for recreation, by the way he manipulates people and social situations for his own advantage, and by his style of conversation as an expression of his personal individuality. In the district there is little preoccupation with clothes or commercialized recreation, and the farmer usually has little to gain by manipulating anything but his agricultural implements. Most rural people seem to accept their fate at the mercy of a universe which cannot be effectively controlled by man. With this orientation they seem to maintain a personal dignity which keeps them from attempting to operate manipulatively and opportunistically in social situations as readily as do urban people. The conversation of rural people may be more difficult to engage, but once underway it is far less likely to involve deception than that of urban people, who chat away much more freely with bare acquaintances. But their scanty schooling and less sophisticated style of speech serve to keep rural people from having pretensions of being "cultured," and they often feel inferior on this score.

The hamlet resident tends to display conspicuously less wealth than he has. There is a classic type well known in Costa Rica, the *gamonal*, the wealthy peasant who lives almost as frugally as a poor one. This is typical of the rural pattern of humbleness in behavior, speech, and dress. In urban centers quite the opposite tends to be true: people tend to *aparentar*, to display conspicuous signs of far greater apparent wealth than they actually have. Thus the elegantly dressed couples at a formal dance may actually be all but penniless and deeply in debt; the barefoot, unshaven old man in the dirty clothes working in a group of laborers of like appearance may actually be the owner of assets worth many thousands of dollars.

RECENT CHANGES AND TRENDS

In recent decades, and especially since the early 1940's, changes have been occurring in Costa Rica which serve to complicate the differences among the settlement types as presented thus far. The main direction of these changes has been to spread urban patterns of behavior and values among people who in the past would have remained strictly rural. Some of these are people living in previously rural districts near the large urban centers, which have extended their influence to nearby areas to urbanize them in appearance and attract

their residents to employment in the urban center. Others are people who have migrated in great numbers from hamlets to urban areas to take up a new way of life.

There has been an increasing migration from the districts of the Central Plateau to regions off the Plateau as well as to urban centers on it.⁸ The main factors behind this migration have been: the rapidly increasing population of large families; a system of inheritance which divides the land among all heirs and thus produces holdings too small to support a family; a change in emphasis on the part of large landowners from grain crops to the internationally profitable coffee and cattle, both of which require relatively little labor and allow for no tenancy arrangements suitable for the poor; and increasing governmental and private commercial activities, which provide more work opportunities in urban centers and especially in the city.

As a result of this process, there are "districts" near the national capital which are about as urban in terms of settlement pattern, population density, paved roads, frequent bus service, electricity, elaborate church, patterns of recreation, and nonagricultural employment as many a village further away. The villages near the city and towns tend to be less active commercially and give the impression from the buildings around their plazas of being smaller than they are in population, because residents prefer to shop and find recreation in the larger urban center nearby. Thus the closer a canton is to the city of San José, the more urban the appearance of its hamlets and the less urban the appearance of the center of its village.

CONCLUSIONS

1. About half the population of Costa Rica resides in rural districts with sociocultural characteristics markedly different from those of urban centers, even when these are relatively small villages (less than 2,000 population) serving as trade and marketing centers for rural areas.

2. Latin-American urban behavior patterns are highly valued among large segments of the population of relatively small Costa Rican villages located at relatively great travel distance from large cities.⁹

3. An extreme economic and status differentiation is found in peasant communities of rural districts, with a distinctive subculture in

⁸See Wilburg Jiménez, *Migraciones internas en Costa Rica* (Washington, D. C.: Sección de Trabajo, Migración y Seguridad Social, División de Trabajo y Asuntos Sociales, Departamento de Asuntos Económicos y Sociales, Union Panamérica, 1956).

⁹A similar urban culture, together with superior attitudes toward rural people, is reported for a Puerto Rican capital of a predominantly agricultural municipality with a "town" population of 1,900. Eric R. Wolf, "San José: Subcultures of a 'Traditional' Coffee Municipality," in Julian H. Steward *et al.*, *The People of Puerto Rico* (Urbana: University of Illinois Press, 1956), pp. 175-176.

the lowest ranking but substantial minority.¹⁰ Especially notable is the difference in basic values and family life.

4. The distinctive characteristics of the members of landowning rural families include such so-called "Puritan" traits as the high evaluation and practice of manual labor, ambition, frugality, and lack of conspicuous display or consumption.¹¹

5. Profound social change is occurring in Costa Rica as a result of rapid population increase and a rural-urban migration based less on the attraction of good jobs and living conditions in urban centers than on the increasingly unsatisfactory conditions of rural life for all but families of relatively large landowners.

¹⁰The dominant group corresponds to Adams' "Independent Farmer Cultural Component," while the low-ranking group corresponds to his "Stable Rural Cultural Component" (Adams, *op. cit.*, pp. 892-893).

¹¹Many writers have characterized Latin-American culture as placing a low evaluation on manual labor. For example: "In most of Latin America work is necessary for some people at least, but it is not a particularly esteemed or dignified activity. It is nothing in itself to be rewarded for. . . . Particularly unfortunate are those who must perform the undignified hard labor of everyday life. . . . There is almost everywhere in Latin America a tendency to avoid the stigma of manual labor, for it identifies one with the lower class." William F. Whyte and Allan R. Holmberg, "Human Problems of U. S. Enterprise in Latin America," *Human Organization*, XV (Fall, 1956), 9. William S. Stokes, "The Drag of the Pensadores," in *Foreign Aid Reexamined: A Critical Appraisal*, ed. by James W. Wiggins and Helmut Schoeck (Washington, D. C.: Public Affairs Press, 1958), pp. 76-80, 88-89, cites some twenty works in support of his contention that in Latin-American culture "work is debasing and degrading" for everyone. It might be suggested that conditions in Costa Rica are different. But the Biesanzes, *op. cit.*, p. 165, state that "Costa Ricans despise hand labor," although they admit at the same time that "some say the peasants enjoy work." Their complete discussion, however, supports the first statement, and there is no further indication of rural-urban differences in this regard.

If one might hazard a guess, it would seem that many observers first become aware of a characteristic such as the low evaluation of labor among the highly educated in large urban centers, and then find a similar characteristic in the small villages which have been classified as basically urban in this paper. But because of their small size, remoteness from large cities, and the fact that some large landowners do reside in them, these villages are considered to be rural and representative of farm populations in their basic sociocultural patterns and values. Visits to haciendas would only tend to confirm this impression. But it seems unlikely that there would ever be such a low evaluation of manual labor as alleged for Latin-American culture among peasant farmers working their own land and owning a share or all of the resulting harvest, rather than working primarily for a wage from an employer.

NORMAN HILTON

Technology, Economy, and Society in a Long-settled Area

A change in technology, economic conditions, social organization, or human attitudes may serve to instigate a chain reaction throughout a whole socioeconomic structure. On the other hand, it can rejuvenate certain aspects of that structure which might otherwise have outlived their usefulness. The possibility of such contrasting consequences of change in any particular sphere gives rise to a need for the most comprehensive type of investigation wherever the *status quo* is to be altered by deliberately planned action. This, in turn, calls for the close collaboration of many professions and academic disciplines. The author was intimately connected with the case here presented in this paper in support of this contention.

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FEW students of the social sciences today would deny a close inter-relationship between technology, economy, and society. It is usually accepted that changes in any one result in changes all round. But there is no agreement on where the initial impulse is felt. On the one hand, it is held that technological change results in changes in economy and society, as may seem to be the case in late eighteenth-century Britain. On the other hand, changes in the social order have definitely led to technological changes in such areas as twentieth-century China. But in both these cases it is difficult to pinpoint the true start to the complex sequences of events. In Britain, the climate for technical advance was a specific social order developed over many centuries. In China, the social revolution cannot be divorced from technical advances made earlier in distant parts of the world.

These facts have not always been appreciated, but it is increasingly accepted that technology, economy, and society, plus the gamut of human values, together comprise one side of an equation, the other side of which is environment (physical and cultural), and that changes in any part of the equation require balancing elsewhere. This view

is typically that of the geographer, whose special contribution to knowledge is the study of the significant interrelationships which go to make up "place," but modern work in every social science points to an increasing realization that academic departmentalization cannot explain human activity beyond a certain point.

In given places and at given times, activity in some specific field has undoubtedly triggered periods of rapid acceleration in the development of the whole complex sequence. In eighteenth-century Britain, changing technology played the key role, while in twentieth-century China it was a definite policy of social reorganization. It is often possible, therefore, to distinguish definite phases of all-round development which stand in marked contrast to earlier and later periods. For practical purposes these can usually be studied in isolation, and in such cases the initial impulse can be determined. In other areas, however, change has been an almost imperceptible modification of a long tradition. Here the student must resort to the historical approach.

While the interrelationships, as stated so far, may seem complicated enough, there remains a further possibility which should not be overlooked—namely, that technological change may well help preserve, or even revitalize, social and economic conditions which were becoming moribund and threatened with extinction; that new techniques can give new values to existing institutions. For illustration of this point we shall turn to the Land's End Peninsula—the westernmost tip of the most westerly county in Great Britain. It is not suggested that circumstances prevailing in this area will be paralleled very closely in many parts of the world, but it is suggested that careful investigation elsewhere may often reveal unsuspected relationships between technology, economy, and society which are of vital importance in contemporary social and economic development—as this one proved to be in 1952.

LAND'S END PENINSULA, 1952

Economic circumstances, which were forcing Britain to examine every conceivable way of increasing home food production, focused attention onto large areas of enclosed, derelict land in this peninsula. The granite-faced, earth-filled dykes represented a great expenditure of time and money which suggested better use of the land sometime in the past. Elsewhere in highland Britain, narrow zones of derelict enclosed land are commonplace and reflect both technical change, which overcame the need for subsistence farming on such marginal land, and a changing order of society and values which made people object to geographic isolation. But here in western Cornwall things were different. The waste land was distributed in no obvious zonal pattern; derelict fields were closely intermingled with excellent dairy

grassland and valuable crops of early vegetables and flowers. Yet few farms (even under the stress of a wartime blockade which had pushed arable farming into areas of very dubious quality) had been tempted to extend their boundaries. The tradition was firmly entrenched that these fields were useless.¹

Apart from agricultural interest in the area, the whole social and economic structure of the peninsula was under consideration in connection with the preparation of the County Development Plan.² Decisions were soon to be made regarding the whole pattern of land use, provision of new houses, the need for additional industry, expenditure on schools, roads, and utilities. Briefly, the County Planning Authority was faced with a problem of a partly depopulated interior, a traditional settlement pattern of isolated farms and hamlets which were expensive to service, and a coastal periphery of exceptional beauty which was rapidly attracting population (local and otherwise) to the two old fishing towns, which became tourist and residential centers. Here again the technology-economy-society link was very evident. The depopulation of the hinterland was largely due to the decline of the old tin-mining industry resulting from a sequence of technological advances which put overseas ores on the British market. On the other hand, it was changed technology and subsequent social and value changes which made the tourist industry possible. This revived the local economy, gave remote farms a valuable market, and limited depopulation. Yet, it threatened its own continued existence by altering the settlement pattern and social organization which gave the area its unique character and made it a tourist attraction.

The obvious solution to retaining local character, yet providing sufficient modern services and amenities to hold the local population in the countryside, lay in agricultural development. This involved more than the physical cultivation of unused land. Though it was not generally appreciated at the time in a country where food was still scarce, agricultural policy was soon to emphasize economic production rather than food at any price. It was increasingly important, therefore, that the physically well-endowed but generally small farms be developed into viable economic units. Amalgamation could only lead to further rural depopulation, yet some increase in size was essential—again due to technological changes within the agricultural industry. Hence the importance of developing the derelict land and, in view of the current low assessment of its value, a careful examination of its potential.

¹G. P. Wibberley, "Some Aspects of Problem Rural Areas in Britain," *Geographical Journal*, CXX (March, 1954), 43-61.

²"Cornwall County Development Plan: Written Statement and Analysis of Survey" (Truro, England: Cornwall County Council, 1952).

THE PHYSICAL FACTOR IN THE EQUATION

In starting an investigation of the costs and returns of farming this derelict land, the scientific and technical services of the Ministry of Agriculture were making an important assumption—that whatever had held true in some past period, present day techniques now made cultivation physically possible, and economic conditions seemed to offer a chance of profitable farming. But there were disconcerting doubts in most minds when the vast majority of local opinion clung firmly to the belief that the land was unfarmable. Consequently, the first step was to investigate the physical characteristics of the area.

Briefly, the survey showed the peninsula as a whole to be well-suited to certain types of agricultural production. The main features were soils of medium to good quality, moderate year-round rainfall with a winter maximum, and a marked lack of extreme temperatures (due to the maritime location of the area) which permitted an eleven month growing season for grass. Strong winds were the main disadvantage, but these were of little consequence in predominantly grassland farming with enclosed fields available for sheltering livestock. Physical conditions were sufficient explanation for one aspect of local production—the concentration of the early vegetable and flower cultivation in the sheltered valleys and on slopes with a southeasterly aspect—but were completely inadequate as an explanation of the extensive uncultivated areas scattered among the dairy farms elsewhere. Variations in soil and microclimate beyond the sheltered valleys were evident, but were rarely significant and could not be correlated with the cultivated and uncultivated land. All told, any lack of agricultural development in western Cornwall could not be attributed to an unfavorable physical environment.³

A CULTURAL BARRIER TO DEVELOPMENT

The investigation of geology, topography, climate, and soils had shown no physical barrier to agricultural development. If the investigators' ideas about favorable economic conditions were correct, it was now evident that the views of most local inhabitants were wrong. Yet these were experienced farmers, doing an excellent job of husbandry on their existing cultivated acreages. Just why they held this land in such low regard posed something of a problem. It was reasonable to assume some aspect of their cultural heritage responsible, but an assumption was not sufficient justification for financial investment against their better judgment. Further, as public expenditure would also be involved, some explicit account of the cultural barrier and an assessment of its current validity were required by various units of

³Agricultural Land Service Research Group, "The Land's End Peninsula—A Critical Analysis of the Possibilities of Land Reclamation" (London: Ministry of Agriculture and Fisheries, 1952).

government. These, it was thought, could be found in the long history of the area.

THE ECONOMIC AND SOCIAL EVOLUTION

In no long-settled country can present conditions be completely divorced from the past, and here in western Cornwall an essentially unique agricultural picture reflects not only an ancient agricultural system, but a complete economy rooted in prehistory. For present purposes a detailed historical study is neither possible nor necessary but, even in an outline survey, it is essential to go back some 2,500 years.⁴ When the present writer began the historical enquiry in 1952, this was certainly not the intention. Yet the search for reason in a twentieth-century situation ultimately led back to this remote period. It was a process of retracing the course of regional development but, for convenience here, the findings are presented in chronological order.

The establishment of the "Celtic" tradition: From the visits of the Phoenician traders until the middle of the nineteenth century, this area was characterized by a complex dual economy. Mining and agriculture were practised hand in hand—the former, despite fluctuations, gradually coming to overshadow agriculture as the economy developed. For centuries, the area was remote from the eastern sources of agricultural improvement in England, and there was a remarkable continuity in farming technique and land use which is still apparent today. Without being wholly unsatisfactory, local husbandry was, and still is, foreign to that of the rest of England. Its long leys, small enclosures, dyke-like walls, and its fluctuating margin of cultivation are all part of a theme which has undergone its variations, but which has remained clear and on the whole distinctive.

The so-called Celtic system,⁵ involving small, irregular enclosures with "hedges" built of earth and granite boulders cleared from the soil, was evident in this area by the late Bronze Age. With the enclosures went a system of mixed farming utilizing a regularly cultivated, well-manured "in-field" and an "out-field," perhaps temporarily enclosed, which was occasionally tilled then allowed to revert to waste. It was wasteful "shifting agriculture" but, in a sparsely settled land with farming income supplemented by the mining of tin, it was reasonably satisfactory.

This mining-farming economy resulted in a land-use pattern of small enclosures surrounded by vast areas of moorland waste. Prior to about 600 A.D. the complementary settlement pattern was one of defendable hilltop forts. Then, with more settled conditions and the

⁴Agricultural Land Service Research Group, "A History of Agriculture and Land Use in the Land's End Peninsula" (London: Ministry of Agriculture and Fisheries, 1952).

⁵In use before the coming of the true Celts.

establishment of the Celtic system of inheritance (Gavelkind), came dispersed settlement in isolated farms and hamlets. Roman and Saxon penetration into this area were negligible, and caused no change in landscape, economy, or society—though the Romans, at least, continued to use this major source of tin. Norman changes in the social order (feudalism) were attached very superficially to the established pattern, and their great Domesday Survey of 1086 only confirms the continuance of the Celtic society and economy with its mining, sporadic cultivation, pastoralism, transhumance, and sparse, scattered population.

There is no agreement on whether dispersed settlement has persisted because of economic necessity or some intangible cultural aspect of Celtic society, but there can be no doubt as to its agricultural importance. It precluded the nucleated community with its open-field system which, though it defied progress for centuries, at least kept the peasants in touch with the landowners who ultimately set the example in improvement. In this peninsula the small farms were remote, in space and thought, from the progressive landowners of East Cornwall, and were notoriously slow in following their example. The backwardness in the centuries after Domesday was, in no small measure, due to a settlement pattern and socioeconomic organization which was well established by 1086.⁹

Development of the dual economy and society: From Domesday until the late eighteenth century, the Celtic tradition, essentially extensive and conservative, worked hand in hand with the local concentration on mining to produce a backward agriculture and a primitive type of land use.

During this period mining experienced some periods of depression, but on the whole it prospered and supported the densest population in all rural England. When it did, agriculture generally suffered because it could offer nothing comparable to the financial rewards and legal privileges which society bestowed on the miners. Yet to some extent agriculture benefited from the more lucrative industry. The farms in the southern half of the peninsula (from which area mining had receded) found their market with the mining population, and this was important in view of the remoteness of the county. Further, there can be no doubt that large areas of waste were first cultivated by the miners—who invariably created small holdings around their workings. On the whole, however, contemporary documents leave no doubt that when mining prospered agriculture was neglected.

It took a rapid decline in the mining industry in the late sixteenth century to show the real agricultural potential of the land. People

⁹Norman Hilton, "The Land's End Peninsula—The Influence of History on Agriculture," *Geographical Journal*, CXIX (March, 1953), 57-72.

could no longer afford imported food made expensive by poor transportation and were forced to live from their own land. A phase of agricultural development followed which, by Cornish standards, was revolutionary—though it involved only application of the well-tried techniques long practiced in the coastal and nonmining localities. Frequent use of the plough, alternate husbandry, and heavy fertilization by means of seaweed, sea-sand (lime), and pilchard compost permitted more cultivation of the "out-fields" than had ever been known, and enabled the area to dispense with imported grain. Then, after the Civil War, mining again began to prosper, large areas reverted to furze, and the Cornish Agricultural Revolution died in its infancy.

Towards the end of this period eastern Cornwall was progressing quite rapidly, but the western peninsula, dominated economically by mining, remained Celtic, and a distinctive regional entity. With mining activity more localized, some variation within the peninsula must have been apparent. But the advances of the Agricultural Revolution by-passed the area, and it fell further behind the England of Coke, Townsend, and Bakewell. More miners' small holdings continued to be created, but were abandoned as this notoriously unstable population moved on. Thus the activities of miners and farmers alike tended to produce enclosed derelict fields and dispersed settlement in the countryside.

With dispersed rural settlement well established, it is important to examine the situation which prevailed with regard to "center activities." In Saxon England, the church played an important role as a focal point around which trading activity centered. Here, the parish churches, located on remote, early Celtic Christian sites, never attracted the host of rural craftsmen so typical of the nucleated village. Nor was the market town so closely linked with rural life as in the rest of England. The peninsula proper was devoid of towns, and the two centers on its eastern boundary (Penzance and St. Ives) existed primarily because of specialized functions rather than any general relationship with the hinterland. Both were fishing communities; and though Penzance was vitally interested in the mining industry as well, its role as a mint town made it an outpost of English government rather than a center of Celtic life. In fact, Cornishmen showed typical Celtic disdain for urban life, and left Penzance largely in the hands of "foreigners" (French, Jews, and English). But two points about the urban aspects of west Cornish society are worthy of note. First, though the urban-rural relationship was a loose one, the town, plus eleven rural parishes, comprised the kind of trade-centered community which was to become significant in the twentieth century. Second, the non-Celtic element in the population was accepted to a degree unknown in other areas of the Celtic fringe (e.g., Wales and Ireland).

Growing regional differentiation within the peninsula: Towards the end of the eighteenth century, slight variations between the northern and southern halves of the peninsula were evident—developed at an almost imperceptible rate over the previous 200 years in an area once practically homogeneous. The north had the mines and the untidy field pattern of the accompanying small holdings, while the southern parishes had brought a greater proportion of their land up to what might be called “in-field standard” of cultivation. But in farming, these variations were quite superficial. Ready conversion from arable to pasture was the rule. The plough was used all around the holding, but irregularly and haphazardly, exhausting the soil wherever heavy manuring was not possible. Grains were the paramount crops in an essentially subsistence agriculture and were succeeded, when yields began to fall, by grass or furze—depending on the position in relation to the homestead and the main occupation of the tenant. Livestock, though hardy and plentiful, were of poor quality, and agriculture in general was primitive over the whole peninsula. Then, with the closing years of the eighteenth century, came fundamental changes which produced the first really distinctive agricultural subdivision.

The improvements in livestock, the improved strains of grain, and the increasing knowledge of roots and rotations which came with the Agricultural Revolution reached eastern Cornwall during the last two or three decades of the eighteenth century and were seen in the west before 1800. The efforts of progressive landlords and the newly founded Royal Cornwall Agricultural Society, in combination with the traditional emphasis on heavy fertilization, gave the southeastern part of the area (around Penzance) an agricultural reputation of more than local significance—though not yet as vegetable and flower land. But the progressive area did not extend much beyond the sheltered market-garden area of the present day—and for good enough reasons. Mining, now benefiting from the mechanical advances of the Industrial Revolution, was more profitable than ever, both to owners and workers. Transport was costly on the mule tracks of the uplands and, above all, the soil and climate were not well-suited to the cereal crops which were all-important in a fundamentally subsistence economy. It is not surprising that the new husbandry stopped short of the windswept mining areas.

Development of the modern socioeconomic pattern: Despite many differences in character between this peninsula and the rest of Britain, the district has followed the prevailing economic and social trends during the past hundred years more closely than ever before in its history. This has entailed more changes in one century than were previously experienced in twenty-five, but they have not been effected uniformly over the whole area. Some parts have been by-passed almost

completely, and the fact that there existed a problem rural area in mid-twentieth century can be attributed mainly to the detrimental aspects of the historical legacy remaining firmly entrenched.

Developments which influenced this district were at the international, national, and local levels. General improvements in national living standard and increased understanding of diet resulted in a large and profitable market for market-garden crops and dairy produce. Tremendous advances in transportation enabled this remote district to compete in the national market for perishable goods. Improved communications also benefited the area by removing the need to grow cereals under adverse physical conditions, and again by opening the mild coast to winter residents and summer tourists. Further, many of these advances were particularly beneficial to an area suffering from lack of contact with agricultural improvers, but which had a long tradition of mixed farming based on rotational grass. Consequently, after about 1870, when overseas developments had made it unprofitable to grow cereals in Britain, Land's End Peninsula found itself eminently suited for, and in the forefront of the new agriculture—partly because of imported technical improvements, but largely because its natural assets and traditional methods had taken on new values. The progressive Penzance area became the nation's major producer of early vegetables and flowers, while the remainder of the southern parishes developed into a commercial mixed-farming area with a strong emphasis on dairying. There, between 1870 and 1933, leys increased some 25 per cent within the total improved area, and cereals declined in favor of fodder crops and potatoes. Sheep declined rapidly, but cattle increased greatly in number and were improved in quality, while pigs became very important after 1918.

The changes that occurred in what is now the dairy belt were more remarkable than those which transformed the Penzance area, for it is evident that in 1840 changes in traditional Celtic husbandry had been very meager indeed. The improvements were successful largely because they fitted the environment, but it has already been shown that physical conditions varied little on the areas which were idle in 1952. To understand the lack of adjustment to modern conditions over this considerable part of the peninsula, it is necessary to look once again at local mining, which still remained a hindrance to agricultural development. Through the 1850's the industry was more prosperous than ever, and its effect on farming was much the same as in the past. Cultivation of the small holdings continued, but larger and larger areas were abandoned as mining became more capitalized and more localized. For a while, it maintained a large population, provided the nonmining areas with ready markets, and thereby checked the rural depopulation which was occurring elsewhere in the 1840's. But quite suddenly in the mid-

dle sixties, as a result of overseas competition, the industry rapidly declined and almost died out. A large population became redundant, the small holdings would not provide a living from farming alone, and the new dairying on the small family farms of the south could not absorb the new supply of labor. So the exodus began—ex-miners moving to the tourist centers of the coast or migrating to new communities in America, and leaving derelict fields, homesteads, and hamlets in a formerly prosperous area. Then came the twentieth century with its great improvements in roads, its piped water and electricity, and its advances in social services. Here it found a half-empty land which was by no means utilized to the full. But unfortunately, modern roads and services, with their high overhead costs, tend to concentrate where population is compactly settled. Hence, the area became less and less attractive, and for technical and social reasons the new dairy belt failed to spread across the old mining areas.

By the early years of the twentieth century all the elements of the current situation were evident—at least in embryonic form. As regards agriculture, times were not such, after the early twenties, that anyone would pay particular attention to the peculiar nature of derelict lands in this area. British farming as a whole was in the throes of depression and neglect. This showed in Cornwall as elsewhere, but bad farming only reflected the general market conditions and was to be expected. What was much more surprising was the lack of agricultural development during the 1940's—when, as already noted, a nationwide program of intensification hardly made a mark on vast areas which had all known the plough in the past. Access for modern machinery was difficult because the bulk of the reclaimable areas had been by-passed by modern roads which came too late to be attracted by the old mineral wealth. Also, population was badly distributed after the migrations of the previous decades, and there was not, during the war, the necessary means to effect a redistribution more in keeping with requirements. Neither was it certain that conditions making such a redistribution desirable would be lasting. These deficiencies were reflections of a long and peculiar sequence of interrelationships, as was the real root of the trouble—the lingering underestimation of the potential productivity of this land, which prevented any action on a scale sufficient to remedy the other major drawbacks.

This, essentially, was the state of affairs in 1952, when a feeling developed in some quarters that modern farm machinery and a current long-term agricultural policy of increased domestic food production from economically viable family farms offered opportunity to put this unique area to its optimum use. On the farming side, technological progress made possible the most intensive use to date of the physical endowment and certain aspects of traditional Celtic agriculture. Economically conditions were favorable because of the postwar

changes in Britain's international trading position, and, socially, a host of new concepts were being accepted. At the national level these included financial aid to agriculture and comprehensive planning of urban and rural areas—both reflecting new thinking about society and values. At the local level the ideas had to be put into practice. It was fortunate that two traditional aspects of the Cornish social order—namely, the large trade-centered community and the ability to accept “foreigners” without losing the Celtic character, lent themselves to modern social and economic conditions. It was doubly fortunate that agricultural development could both contribute to and benefit from the over-all plan for social and economic welfare.

THE SEQUENCE OF INTERRELATED CHANGES

1. Developments in the Mediterranean world (technological, economic, and social) led to a demand for a scarce resource (tin) which, in turn, led to the “discovery” of Britain and the development of an economy in western Cornwall which was very different from the norm for Celtic lands.

2. The course of Roman expansion in Europe led to the Romanization of Britain from Kent (in the southeast) and not from the southwest, which had previously been the principal avenue of contact with Europe. This fact, plus the physical environment (difficult topography), caused the Celtic society to remain substantially undisturbed by Roman influence—though the continuance of the tin trade ensured a tradition of peaceful contact with outsiders which was largely lacking in other Celtic areas. An economic consideration was setting a social pattern.

3. Saxon penetration also stopped short of this peninsula for much the same reasons. The peninsula, therefore, became a retreat for the Celtic people as a whole. Here, the need for fortress-type settlements disappeared at an early date, and the peculiar kind of Celtic Christianity with its remote churches flourished independently of Rome. These were vital factors in establishing the tradition of dispersed settlement, together with the social concept of Gavelkind and the pastoralism which was not unrelated to the physical environment. A social and economic adjustment to environment that would be resistant to technological change was becoming firmly entrenched.

4. Dispersed settlement and the existence of a source of income other than agriculture made feudalism meaningless. This gave the economy an independence which led to unusual prosperity in the early middle ages, but which ultimately delayed agricultural improvement. Social and physical factors were, therefore, first conducive to economic progress, but later detrimental to technological change and economic improvement in agriculture.

5. The economic and social advantages of mining as an occupation

led to a neglect of agriculture, but certain circumstances (probably the difficulty of internal transportation, the unreliability of imported grain supplies, and the fluctuations of the mining industry) led to part-time farming in the mining areas, and so to a process of breaking in new land.

6. Isolation and poor transport facilities in general made the cultivation of cereals essential, despite the suitability of the land for grass and root crops and the purchasing power of the prosperous miners. But the nature of the soils demanded an extensive farming technique which resulted in a sequence of cultivation, reversion to waste, and then further cultivation. Inadequate transport technology, in relation to a physical factor, was resulting in a nonoptimum type of farming. This was leading to an areal extension of the established social organization.

7. Depression in the mining industry led to intensification of agriculture and showed the true potential of the land, but, on the return of prosperity, farming again became unattractive by comparison. Here an economic change led to other economic activity.

8. As the national economy expanded, the mining products became more valuable and could stand the costs of transportation, but this preceded cheap transportation of low-priced bulk products. The state of transportation in the nation as a whole was affecting various parts of the local economy in different degree. Hence, in this peninsula, food was at a premium, and the areas where mines became exhausted developed into local granaries—though still without adopting the new techniques of the Agricultural Revolution, except in the vicinity of Penzance.

9. Though the Celtic aversion to urban life limited town growth, the continued production of an export commodity demanded at least one outlet. This was virtually a foreign colony, but a long expanse of time made the urban population acceptable despite their non-Celtic origins. Consequently, the peninsula entered the modern period with no real barrier between the urban and rural people, and with the great advantage of well-marked boundaries to a community with both urban and rural components. These variations from the normal Celtic social pattern were directly attributable to the peculiar nature of the local economy.

10. In the second half of the nineteenth century, technological, economic, and social development at home and overseas put an end to profitable cereal production in Britain, but also removed the need for subsistence agriculture. Most of the "better" farming areas in Britain suffered. But the forces which ruined general arable farms also created a new market for dairy produce and market-garden crops, and placed new economic values on the characteristic features of this penin-

sula—i.e., the physical suitability of the area for growing grass and early crops, and the tradition of alternate husbandry which could now utilize improved grass-clover mixtures.

11. The same forces also closed the mines, but, unlike earlier periods of depression, in this period the miners had opportunity to migrate to new mines overseas, and did so in large numbers. This was, in a sense, fortunate—for this time they could not turn to farming. (N.B. The decline in mining preceded the growth of the new agricultural market. Had the timing been slightly different, the new dairying might have engulfed the whole area.)

12. While the interior was experiencing depopulation, further development of the trends in technology, economy, and society (plus the change in human values which accompanied them), led to the tourist industry and an increasing population on the coast. This had economic consequences in that it greatly improved the market for the new agricultural products.

13. It also ensured that the periphery got its share of new roads, utilities, and social services when, later in the twentieth century, these became essential parts of the modern economy and society. These aspects of modern life, however, because of their tendency to follow close concentrations of population, never reached the depopulated interior, which consequently became less and less attractive as a place to live or work.

14. During the Second World War, newly available agricultural techniques were not utilized, and economic development was retarded by a badly adjusted settlement pattern and faulty appraisal of land—both of which originated in the old dual economy.

15. Finally, after the war, there arose a new economic relationship between Britain and the rest of the world, while at home new social concepts were developed which reassessed the urban-rural relationship, emphasized the value of distinctive regional characteristics, and ensured legal, administrative, and financial arrangements for socio-economic reorganization. Together with still more advances in technology, these things were sufficient to produce a new phase of regional development—co-ordinated so that new technological, economic, and social requirements could be met, and utilizing those aspects of a rich historical legacy which offered something for the future.

THE SIGNIFICANCE OF THE LAND'S END SURVEYS

The preceding account of development in the long-settled Land's End Peninsula amply illustrates the complexity of the interplay between technological, economic, and social forces. The lesson that all the work in this area teaches is the need for wariness in approaching a problem of contemporary development.

It has been pointed out that neither the sources of information nor the degree of retrospection which proved useful in Cornwall are likely to be vital in many other cases,⁷ but this is incidental. In most areas the historical approach will have something to offer, and the Land's End method of tracing the course of development to the point where antecedents cease to be significant is the economical one.

Yet this paper is not primarily a plea for the consideration of historical influences. Rather, it calls for a completely interdisciplinary approach to contemporary problems. Without such an approach the Land's End surveys would have been meaningless. The agricultural aspects of the work were carried out by an agricultural economist and three geographers, aided when and where necessary by other economists, agricultural and horticultural specialists, a microclimatologist, and (more surprisingly) archeologists and an etymologist. The county planning survey, to which the farming aspects were related, involved architects, engineers, geologists, and sociologists, and the effective presentation of the whole work was largely due to the efforts of the Ministry's cartographers. The geographers felt that this co-ordinated approach was their special contribution, and one eminent British authority claimed that this, and similar regional surveys, point to one direction in which geography in Britain might profitably advance.⁸ Yet the work was supervised by an agricultural economist! Today, with most social scientists broadening their fields of interest, the interdisciplinary approach offers great rewards. And if economist, sociologist, or any one else is prepared to take the wide view, then nomenclature hardly matters.

Finally, we must consider the reaction of the local people. One notable American sociologist has said that major obstacles to action programs are likely to arise when sociologists draw attention to local maladjustments.⁹ In the Land's End Peninsula no such difficulty was met. Had it been otherwise, all the work could have been wasted—but everyone concerned apparently felt that reasonable people reacted favorably to careful, comprehensive survey and impartial analysis of sober facts.

⁷Norman Hilton, "The Presentation of Historical Evidence in Land Use Work," *Land Service Journal* (London, Ministry of Agriculture and Fisheries), Sept., 1953, pp. 10-15.

⁸S. W. Wooldridge, Discussion following the presentation of the paper, "Some Aspects of Problem Rural Areas in Britain," *Geographical Journal*, CXX (March, 1954), 59-60.

⁹Carl C. Taylor, "The Contribution of Sociology to Agriculture," *Farmers in a Changing World: Yearbook of Agriculture* (Washington, D.C.: U.S. Department of Agriculture, 1940), 1042-1055.

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Political Participation among Farmers as Related to Socio- economic Status and Perception of the Political Process

The purpose of the study is to determine some of the correlates of farmer participation in elections and their contact with elected officials. Voting in nonpartisan elections is not highly associated with voting in partisan elections. While income, education, and participation in farming organizations had little effect upon voting, those with higher incomes, larger farms, and participation in farm organizations had contacted elected officials to a greater extent. The perception of the influence of the government on farm matters and confidence in the effectiveness of participation in the political process are conditions of consistent voting in major elections.

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"THE FARMER" has always played an important role in political affairs in the United States. "Farm issues" are debated almost every year in Congress in an attempt to arrive at an acceptable farm program. Hence, it seems appropriate to ask: What is the extent and nature of participation by farmers in the political process? How does participation vary with economic and social status and other personal

*This paper reports findings from a study of farmer-government relationships, supported by the University Research Committee and the Agricultural Experiment Station, University of Wisconsin.

and group affiliations of the farmer? How does participation vary with the farmer's interest in and knowledge of political affairs, his satisfaction with the current farm situation, his perception of the role of government in farm matters, and his feeling as to the effectiveness of his participation in the political process?

This is a study of farmer political behavior in a single Wisconsin county. Its purpose is to determine some of the correlates of farmer participation in elections and of their contact with public officials.

Voting has been found to vary with personal and demographic characteristics such as age, sex, education, religion, role, residence, and occupation.¹ Voting in presidential elections has also been found to vary with interest in the specific elections, suggesting that voting is part of a continuum of political involvement beginning with an interest in political affairs followed by various types of behavior including seeking information, talking with others, voting, and taking active part in political affairs.² Interest is associated with social background and personal characteristics which affect receptivity to political issues and events.

The influence of group membership and participation upon political participation has been substantiated.³ While there is no reason to believe that the farmer is different from other groups in the forces acting upon him in the area of political participation, there is need for testing the findings of other studies within the rural segment of the population which has a different social, economic, and ecological make-up. The Erie County study of voting in 1940 shows relatively little difference in the proportion of urban and rural persons with a high interest in the election (30 as compared with 23 per cent).⁴

The influence of ideological and attitudinal factors upon the vote

¹Gordon M. Connelly and Harry M. Field, "The Non-Voter—Who He Is, What He Thinks," *Public Opinion Quarterly*, VIII (1944), 155-187; and Gerhardt H. Saenger, "Social Status and Political Behavior," *American Journal of Sociology*, LI (1945), 103-113.

²Paul F. Lazarsfeld, Bernard Berelson, and Hazel Gaudet, *The Peoples' Choice* (New York: Columbia University Press, 1948), pp. 42-49; and Bernard Berelson, Paul F. Lazarsfeld, and William McPhee, *Voting: A Study of Opinion Formation in a Presidential Campaign* (Chicago: University of Chicago Press, 1954), pp. 31-33.

³Wayne Dennis, "Registration and Voting in a Patriotic Organization," *Journal of Social Psychology*, I (1930), 317-318; Philip K. Hastings, "The Non-Voter in 1952: A Study of Pittsfield, Massachusetts," *Journal of Psychology*, XXXVIII (1954), 301-312; Angus Campbell, Gerald Gurin, and Warren E. Miller, *The Voter Decides* (Evanston: Row, Peterson, 1954), p. 202; Arthur J. Kornhauser, H. L. Sheppard, and Albert J. Meyer, *When Labor Votes: A Study of Auto Workers* (New York: University Books, 1956); Robert E. Lane, *Political Life: How People Get Involved in Politics* (Glencoe, Ill.: Free Press, 1958), pp. 187-203; and, Herbert Maccoby, "The Differential Political Activity of Participation in a Voluntary Association," *American Sociological Review*, XXIII (1958), 524-532.

⁴Lazarsfeld, Berelson, and Gaudet, *op. cit.*, p. 43.

in national elections has been demonstrated by several studies of voting behavior.⁵ These studies, however, have been concerned more with the direction of voting than with the act of participation in elections and contact with public officials. The concern here is not with *how* a person votes but *whether* he votes in different types of elections and whether he attempts to influence elected officials through personal contact.

The position taken here is that participation in political affairs occurs with a general interest in public affairs as well as with a specific interest in a particular election or legislative action. This general interest is most likely to be highest for those of highest economic and social status and for those participating in occupationally oriented organizations. Socioeconomic status and social participation, however, are not sufficient to explain the consistency of voting and other forms of political participation. Participation is also influenced (1) by the farmer's ideas as to the role of government in farm matters, (2) by his feeling of the need for governmental action, and (3) by his feeling as to the effectiveness of his participation in political affairs in obtaining that action.

While the main objective of this study is to develop rather than to test hypotheses, two general hypotheses helped to guide the analysis: 1) *Participation in elections and contact with public officials is positively associated with level of education, size of farm, income, participation in farm organizations, and level of living.* 2) *Participation in elections and contact with public officials is positively associated with perception of the effectiveness of the government in influencing farmers' interests and confidence in participation in the political process.*

CHARACTERISTICS OF THE COUNTY

The county selected for study (Dodge County, Wisconsin) is one in which there has been a strong vote for both Republican and Democratic candidates in recent elections and one in which the farms are reasonably uniform with respect to size and type. Dairying is the predominant farm enterprise, with other types of farming (truck crops, beef cattle, and hogs) dominant for about one-fourth of the farms. The average size of farms is 127 acres as compared with 147 acres for the State of Wisconsin, indicating rather intensive cultivation. Most of the operators own their farms, with only 30 per cent classified as tenants. While the largest city in the county has fewer than 50,000 people, only 32 per cent of the labor force is employed in agriculture, indicating the attraction of urban centers outside the county.

⁵See Lazarsfeld, Berelson, and Gaudet, *op. cit.*, pp. 45-49; Campbell, Gurin, and Miller, *op. cit.*, pp. 187-199; and Lane, *op. cit.*, "Political Man and His Social Attitudes," ch. 12.

The nationality background of the people of the county is principally German. This may help to account for an unfavorable attitude toward high school education among rural families in this county.⁶ In 1950, only 55.2 per cent of the rural farm youth 16-17 years of age were enrolled in school, the lowest proportion of any county in the state. Although the county has traditionally been Republican, it has swung to favor the Democratic candidate in a more recent senatorial election. There has been little party organization in the county, with none involving any large number of farm people. Farm organizations have not been very active in recent years. Only the Farm Bureau has had a continuing program in the county, although there are a few members of the Farmers Union and the Grange.

The sample for the study was selected at random from a list of farm operators provided by the Agriculture Stabilization and Conservation Service in the county. A ratio of one in twenty was drawn, making a total of 159 in the sample. Interviews were conducted during July and August, 1958. Only those making half or more of their income from farming and who were residing in the county were included in the population from which the sample was drawn. It should be kept in mind that this is a relatively homogeneous group with respect to occupation, income, and group participation.

VOTING IN PARTISAN AND IN NONPARTISAN ELECTIONS

Is voting in Wisconsin's nonpartisan spring elections part of the same behavior as voting in the major elections? Participation in nonpartisan elections allows us to explore another dimension of political participation, i.e., in the partisan versus nonpartisan elections. Are they related to each other and influenced by similar factors, or are they different types of political behavior? The spring nonpartisan election is the one at which judges, municipal councilors and administrators, town officials, and county board members are elected. It is sometimes referred to as the "county" election. While, as Epstein indicates, the spring elections become quasi-party contests, there is less likelihood of party activity and pressures at this election.⁷ Only one nonpartisan election was included in the study since it was felt the reliability of responses for earlier nonpartisan elections would be too low.

Voting records in the three most recent partisan elections, 1954, 1956, and 1957, are used to form an index of voting behavior. The percentage voting in each election was as follows:

⁶D. G. Marshall, W. H. Sewell, and A. O. Haller, "Factors Associated with High School Attendance of Wisconsin Farm Youth," *Rural Sociology*, XVIII (1953), 257-260.

⁷Leon D. Epstein, *Politics in Wisconsin* (Madison: University of Wisconsin Press, 1958), p. 24.

	<i>Yes</i>	<i>No</i>	<i>Don't remember</i>
1954 congressional election	72%	15%	12%
1956 presidential election	89%	9%	2%
1957 special senatorial election	57%	40%	3%

It is evident that the presidential election year brings out the highest vote, with nine out of ten farmers saying they went to the polls. About three-fourths said they went to the polls in 1954 when elections were held for congressional candidates and the Governor of the state in addition to lesser officials. The special senatorial election in the fall of 1957 was called by the Governor because of Senator McCarthy's death. Scaling of the vote in these three elections was attempted, but reproducibility was not sufficiently high to justify a Guttman-type scale. This suggests that the combination of issues, candidates, and situational factors influenced individual voter turnout in the specific elections.

First, it might be observed that about half of the sample farmers said they had voted in the previous spring election. (See Table 1.)

Table 1. Vote in the 1958 spring nonpartisan election by vote in three partisan elections (1954, 1956, and 1957)

Participation in three partisan elections	Number	Per cent	Participation in the spring nonpartisan election of 1958		
			Yes	No	Don't know
Total	159	100	73	82	4
Voted in all three	73	46	49	23	1
Voted in two	51	32	17	33	1
Voted in one	21	13	7	12	2
Voted in none	14	9	—	14	—

Approximately the same proportion reported voting in all three of the previous major elections in 1954, 1956, and 1957, but about one-third of those who said they voted in the three major elections also said they had not voted in the spring election. The data, however, indicate that voting in the major elections does not necessarily imply voting in the nonpartisan spring election. On the other hand, all 14 who said they had not voted in either previous major election also said they did not vote in the spring election. Hence, despite the association between

voting in the two types of elections, there is justification for considering them as separate variables in this analysis of voting behavior.⁸

PARTICIPATION IN ELECTIONS AND SOCIOECONOMIC STATUS

While participation in specific elections is a function of issues, candidates, and situational factors, it is proposed here that participation in elections is a variable which can be explained in part by a combination of economic, social, and psychological factors. This view is based upon the assumption that the person has a commitment to participation in the political process by virtue of his economic interests, his social status, and his set of ideas, perceptions, and attitudes. These of course change over time but not as quickly as do candidates, issues, and other circumstances. The person's commitment to the political process is a function of his role as citizen, taxpayer, parent, and consumer as well as farmer, worker, or business man. The reasoning is that continued participation in elections is positively associated with socioeconomic status, since those of higher status will have the combination of felt needs, commitment to public affairs, and group membership, which is more likely to result in a positive approach to the political process.

Table 2 summarizes the results of the examination of the relationships between these and other selected socioeconomic variables and participation in two types of elections. In general, the hypothesis is not supported for this sample of Wisconsin farmers, contrary to the findings of other studies.⁹ Yet, certain of the relationships deserve further comment and offer suggestions for further analysis.

In support of the findings of some studies of voting among the general population, educational level has little relation to voting in either of the partisan elections.¹⁰ Educational level, however, appears to have some relation to voting in the nonpartisan election. While only a third of the 32 farmers with less than grade school education voted in the spring election in 1958, about half of those above this level voted in the same election. In contrast, those with less than grade school education were as likely to vote in major elections as those with some high school education. Very few had attended college. Perhaps participation in nonpartisan elections implies a greater commitment

⁸See George Belknap and Ralph Smuckler, "Political Power Relations in a Mid-west City," *Public Opinion Quarterly*, XX (1956), 80; and discussion in Lane, *op. cit.*, pp. 318-319.

⁹For example, Angus Campbell and Robert S. Kahn, *The People Elect a President* (Ann Arbor, Michigan: Survey Research Center, 1952), ch. 3.

¹⁰Lazarsfeld, Berelson, and Gaudet, *op. cit.*, p. 47. With interest level controlled there is no relationship with education. Sheldon J. Korchin, "Psychological Variables in the Behavior of Voters" (Doctoral dissertation, Harvard University, 1946). Education is not associated with voting turnout when economic status is controlled.

Table 2. Chi-square test of association and coefficient of contingency between selected socioeconomic variables with voting in partisan elections in 1954, 1956, and 1957 and in nonpartisan election in 1958

Independent variable	Participation in partisan elections				Participation in nonpartisan election			
	X^2	d.f.	P	C*	X^2	d.f.	P	C*
School grade completed	3.32	4	.70	—	2.01	3	.70	—
Size of farm	4.22	4	.50	—	1.80	2	.95	—
Total gross income	2.93	3	.50	—	.90	3	.90	—
Nonfarm work experience	1.98	3	.70	—	3.65	1	.10	.15
Participation in farm organizations	5.80	4	.30	—	2.05	3	.70	—
Level of living index	9.10	4	.10	.23	8.41	3	.05	.22
Age	8.31	6	.30	—	4.44	3	.30	—

$$\text{*Coefficient of Contingency} = \sqrt{\frac{X^2}{N + X^2}}$$

to participation in political affairs than does participation in partisan elections.¹¹

Economic status of the farmer has little effect upon whether he votes in partisan elections or in nonpartisan elections. Nonfarm work experience has no effect upon voting in fall elections but is slightly associated with the failure to vote in the spring election. This suggests the hypothesis that voting in nonpartisan elections is in part a function of knowledge of and involvement in local affairs. Some of those with nonfarm work experience have moved in from outside the county and are less likely to have a knowledge of or interest in local affairs than those who have always resided in the county.¹²

Participation in farm organizations is not significantly associated with voting, although the highest 10 per cent with respect to participation are the most consistent voters. While the leading participators are

¹¹This is contrary to some notions as to the nature of participation in local governmental affairs. Lane, *op. cit.*, pp. 343-344.

¹²See A. H. Birch and Peter Campbell, "Voting Behavior in a Lancashire Constituency," *British Journal of Sociology*, I (1950), 197-208; and Harry Sharp, "Migration and Voting Behavior in a Metropolitan Community," *Public Opinion Quarterly*, XIX (1955), 206-209. The longer the residence in the community the greater the likelihood of voting according to both of the above studies.

also consistent voters, participation at lower levels apparently has little association with voting in either general, local, or special elections for this sample of farmers. It should be pointed out that none of the general farm organizations were very active in the county. Only about one-sixth of those interviewed were active members of the Farm Bureau or other general farm organizations.

A better indication of social status than participation in farm organizations is level of living of the families. While there is a positive association between level of living, as measured by household possessions, and voting in the fall elections, it is not significant at the .05 level of confidence. Only those in the highest level of living category were consistently high voters. Those with the lowest level of living made up more than half of the nonvoters. However, level of living is significantly associated with voting in the spring election of 1958, with those with the highest level of living voting most frequently. This supports the notion that those of higher social status are more likely to vote in nonpartisan elections, to fulfill their obligation of civic duty.

Age also has little effect upon farmers voting in Dodge county. There is some tendency for the middle age group to go to the polls most consistently.¹³ Other studies have found that the middle age and older persons have a higher interest in elections¹⁴ and are more likely to turn out to vote. The reasoning is that middle age, with its responsibilities of property ownership, group participation, and family responsibilities, is likely to result in greater political participation.

PARTICIPATION IN ELECTIONS AND SELECTED VARIABLES

If voting in elections is the result of an individual as well as social process, it is necessary to take into account the voter's ideological and attitudinal make-up. Among other things these include his idea as to the role of government in farm matters, his perception of the need for governmental action to assist the farmer, and his confidence in the effectiveness of his participation in political affairs. The measures of each of these aspects are very crude, but it is hoped that they are adequate to test the validity of the general model of political behavior used in this study.

Interest in public affairs was determined by asking the respondents whether they paid "a great deal," "only a little," or "no attention" to what Congress does on the farm program as they read or listened to the news. Of those who said they paid "a great deal" of attention to what Congress did on the farm program, over half had voted in all three elections. Only a third of those who paid less attention to what Con-

¹³This is the conclusion of Lane (*op. cit.*, p. 219) in summarizing the findings of several studies.

¹⁴Lazarsfeld, Berelson, and Gaudet, *op. cit.*, p. 44.

Table 3. Chi-square tests of association and coefficients of contingency between selected ideological and attitudinal variables and voting in partisan elections in 1954, 1956, and 1957 and in nonpartisan election in 1958

Independent variable	Participation in three partisan elections				Participation in nonpartisan election			
	X^2	<i>df.</i>	<i>P</i>	<i>C</i>	X^2	<i>df.</i>	<i>P</i>	<i>C</i>
Attention to what Congress does on farm programs	9.94	3	.05	.24	1.40	2	.30	—
Knowledge of party policy*	5.78	6	.50	—	1.75	3	.70	—
Perception of amount of govt. influence of farm matters	7.80	3	.05	.22	4.92	3	.20	—
Index of political self-confidence	3.61	6	.70	—	2.73	3	.30	—

*Knowledge of the two major parties' stands on labor unions and on price supports.

gress did on the farm program had voted as often. As might be expected, interest in the farm program had less effect upon vote in the nonpartisan spring election, although the relationship is in the same direction.

If participation in elections is a matter of individual interest and attention, it should be associated with knowledge of party policy. While knowledge of party policy appears to be positively related to participation in the elections, the relationship obtained from the present sample is not reliable. Slightly over half of those with most knowledge of the two major parties' stands on labor unions and on price supports for farmers voted in all three elections, while about three-eighths of those with least knowledge voted in as many. Consistent voters are not much better informed about the distinctions in party policy than nonvoters or inconsistent voters.¹⁵

Perception of the influence of government in farm matters and confidence in the effectiveness of participation in the political process should affect voting behavior. Perception of the government's influ-

¹⁵This is contrary to the findings of the Michigan study in which perception of party differences is associated with turnout. Campbell, Gurin, and Miller, *op. cit.*, pp. 126-129.

ence upon matters pertaining to farmers was obtained by responses to two questions, one concerned with the conservation of natural resources, and the second pertaining to the prosperity of farmers. Responses to these two questions were combined to form an index of perceived government influence in farm matters. While the relationship is not consistent, there is evidence that those who felt that government had much influence tended to vote more frequently in partisan elections. One-sixth of those who felt that government did not have much influence in farm matters, as compared with one in twenty of those who felt that the government had much influence in either or both areas, had not voted in either of the three major elections. While voting in the nonpartisan election tends to be positively associated with the feeling that government has much influence in the conservation of resources and in affecting farmer's prosperity, the association is not significant at the .05 level of confidence.

Participation in elections assumes a certain degree of confidence in one's relation to the political process. Hence, an attempt was made to relate degree of confidence in the effectiveness of one's participation in political affairs to voting.¹⁶ For this purpose respondents were asked to respond to these statements: "Public officials don't care what we think," "There is little use writing to public officials because they are not interested in what the common man thinks," and "So many others vote in the national elections that it doesn't matter whether I vote or not." From responses to these items, a four-category index was constructed with a distribution from low to high of 17, 36, 35, and 71. This index of political self-confidence is not significantly associated with voting either in the national elections or in the local nonpartisan elections.¹⁷ With gross income controlled, there is still no relationship of confidence in the political process with voting behavior. It is worth noting, however, that the first and second items of the index of political self-confidence are significantly associated with participation in the major elections. Perhaps further refinement of this index would disclose more distinct association of perception of the effect of one's participation with actual participation in political activities.

CONTACT WITH ELECTED OFFICIALS AND SOCIOECONOMIC STATUS

Contact with elected officials is another way of exerting influence in the political process. It is a more active form of political participation than voting. It requires sufficient motivation on the part of the respondent to seek out the senator, congressman, or local official and express his views or at least to be in a favorable situation in which the contact

¹⁶See index of political efficacy in Campbell, Gurin, and Miller, *op. cit.*, pp. 187-194.

¹⁷This is contrary to the Michigan and New York studies. *Ibid.*

can be made informally. Contact with local officials was frequently made in connection with participation in business, social, or other affairs in the county. Contact with senators and congressmen was frequently in connection with speeches or public activities in which the official participated. Only about two-fifths of the sample had ever contacted an elected official about a public or political matter, half of which had contacted only a county official.

While contact with elected officials is not significantly associated with voting in major national elections (at .05 level of confidence), it is significantly associated with voting in the local nonpartisan election.¹⁸ More than two-thirds of those contacting elected officials outside the county, as compared with two-fifths of those who had not contacted any elected official, had voted in the local nonpartisan election.

This supports the assumption that voting and contact with elected officials are different types of political participation in the county studied. Contact with elected officials is probably a function of interest in political affairs as well as accessibility to those officials. Consequently, high interest in political affairs does not necessarily result in contact for those whose location, social status, or other characteristics prevents contact with elected officials. High social status, on the other hand, is not likely to result in contact without an interest in public or political affairs. It is reasonable to expect that contact with elected officials is more of a social act than voting and is likely to be influenced more by socioeconomic status than by ideological and attitudinal factors. This represents a modification of the hypothesis as stated above.

The summary of relationships of socioeconomic status and contact with elected officials is presented in Table 4. Size of farm, total income, and level of living are all positively associated with contact with elected officials to a significant degree. Level of education is not significantly associated with contact with elected officials among the farmers in this sample. However, unfavorable attitudes toward formal education among the farmers in this area make education an unreliable indicator of social status for this sample of farmers. The positive association of contact with elected officials with material indices of status suggests that such contact might occur in connection with property and occupational interests, in this case, farming.

Although evidence is not presented here, it is worth noting that contact with local officials only tends to be more highly associated with

¹⁸This lack of association between voting in the national elections and contact with elected officials is contrary to findings in a North Carolina study. Frederick H. Harris, Jr., "A Study of Political Participation in Two North Carolina Counties," *Research Previews*, III (1955), 1-7, issued by the Institute for Research in Social Sciences, University of North Carolina, mimeographed. Cited in Lane, *op. cit.*, pp. 93-94.

Table 4. Chi-square test of association and coefficients of contingency between socioeconomic variables of farmers and contact with elected officials*

Independent variable	X^2	<i>d.f.</i>	<i>P</i>	<i>C</i>
School grade completed	3.82	4	.50	—
Size of farm	15.90	4	.01	.30
Total gross income	16.13	4	.01	.30
Participation in farm organizations	8.28	3	.05	.22
Level of living index	7.12	2	.05	.21

*Contact is categorized as "contact with no elected officials," "contact with only county officials," and "contact with other than county officials."

size of farm, gross income, and level of living than is contact with state or national officials. Does this mean that the more wealthy farmer is more influential in local affairs and therefore has more contact with local officials? Or does it mean that state and national elected officials are more accessible to the person with lower status? In any case it appears that local political affairs tend to be of greater concern to those of higher social and economic status than to those of lower status.

Contact with elected officials is positively associated with interest in what Congress does in the farm program, with knowledge of party policy, and with the respondent's being asked about his views on farm matters (Table 5). This is in keeping with the second hypothesis. About two-thirds of those having contacted an elected official were

Table 5. Chi-square test of association and coefficients of contingency between contact with elected officials* and selected ideological and attitudinal variables

Independent variable	X^2	<i>d.f.</i>	<i>P</i>	<i>C</i>
Attention to what Congress does on the farm program	6.78	2	.02	.20
Knowledge of party policy	14.92	4	.01	.29
More likely than others to be asked views on farm program	11.38	4	.02	.26
Perception of amount of govt. influence on farm matters	2.24	3	.50	—
Index of political self-confidence	.81	4	.90	—

*For categories see footnote of Table 4.

greatly interested in congressional action on the farm program, as compared with less than half of those having contacted no official.

In order to test the stability of the relationship of interest in political affairs to contact with elected officials, gross income was controlled by dividing the sample into two approximately equal groups at the \$8,000 level of income. The relationship between interest in what Congress does on farm programs and contact with elected officials is significant for those with \$8,000 and over, but not for those with less than that amount. This suggests that it is the combination of socioeconomic status and interest in political affairs which results in contact with elected officials and that interest in political affairs is not as likely to result in contact on the part of those of lower social and economic status.

Perception of the influence of the government in farm matters and confidence in the effectiveness of participation in the political process apparently have little effect upon contact with elected officials. Such contacts apparently arise out of the combination of specific interests and accessibility to those officials rather than out of the more general psychological states of the individual, i.e., perception of the influence of government in farm matters and confidence in one's participation in the political process.

CONCLUSIONS

The findings of this sample of farmers provide only partial support of theories of participation in the political process as advanced for other populations. First, the results show that voting in local nonpartisan elections is a different type of behavior from voting in the national partisan elections. More study is needed to establish the nature of this difference, which no doubt varies greatly with the local definition of the election and its meaning to the people. The relationship of socioeconomic status with participation in local elections suggests that a study of such participation might provide a fruitful approach to the study of the social and political structure of rural areas.

Second, socioeconomic status has no consistent effect upon participation in elections among a fairly homogeneous farm group, although there is evidence that a high level of living is associated with participation in nonpartisan elections. On the other hand, both economic and social status are associated with contact with elected officials. Such contact is most likely to occur with a combination of high status and an interest in political affairs. Apparently contact with elected officials is more of a social act than going to the polls to vote.

Third, regular participation in partisan elections is influenced by the psychological state of the individual. While the relationships are not highly reliable, there is evidence that interest in government action

affecting farmers, perception of the influence of the government in farm matters, and confidence in the effectiveness of participation in the political process are conditions of consistent voting. This suggests that for a segment without effective group pressures to get people to vote, the ideological and attitudinal states of the individual are likely to affect his participation in partisan elections.

Finally, contact with elected officials is influenced by a different set of conditions than participation in elections. Contact with elected officials is not influenced as much by ideological and attitudinal considerations as it is by the status and role of the individual. Those of higher economic status and levels of living and those who are active in farm organizations are most likely to contact elected officials.

Research Notes

ADOPTION OF HYBRID CORN: PROFITABILITY AND THE INTERACTION EFFECT*

A RECENT controversy has been reported in this journal as to the relationship of profitability and congruence to the rate of adoption of innovations. *Profitability* was regarded as the difference between returns from adoption of an innovation and its economic cost. Griliches¹ explained about 60 per cent of the variation in rate of adoption of hybrid corn, measured by the slope of the S-shaped adoption curve, on the basis of profitability. It is important to note that Griliches utilized aggregate data from crop reporting districts and states in his analysis and made no particular claim that similar results would be obtained when *individual* farmers were used as the unit of analysis.

Brandner and Straus² investigated the relationship of congruence to rate of adoption. *Congruence* occurs when an innovation is related to an already adopted innovation. Brandner and Straus found that hybrid sorghum was adopted more rapidly, as measured by percentage of adoption in the first year of release of the seed, in areas where it was congruent with an existing innovation like hybrid corn than in areas where it was more profitable.

Griliches contended that both profitability and congruence were key variables in the adoption of hybrid sorghum.³ In an earlier article Griliches states,

When uncertainty and the fact that the spread of knowledge is not instantaneous are taken into account, it appears that American farmers have behaved, on the whole, in a fashion consistent with the idea of profit maximization. Where the evidence appears to indicate the contrary, I predict a closer examination of the

*The authors wish to acknowledge the critical reading of this manuscript by Murray Straus of Cornell University, Zvi Griliches of the University of Chicago, and Joe Crymes and Russ Olson of the Ohio State University.

¹Zvi Griliches, "Hybrid Corn: An Exploration in the Economics of Technological Change," *Econometrica*, XXV (1957), 501-522; and "Hybrid Corn and the Economics of Innovation," *Science*, CXXXII (1960), 275-280.

²L. Brandner and M. A. Straus, "Congruence Versus Profitability in the Diffusion of Hybrid Sorghum," *Rural Sociology*, XXIV (1959), 381-383; and L. Brandner, "Evaluation for Congruence as a Factor in Accelerated Adoption of an Agricultural Innovation" (Ph.D. dissertation, University of Wisconsin, 1960).

³Zvi Griliches, "Congruence versus Profitability: A False Dichotomy," *Rural Sociology*, XXV (1960), 354-356.

relevant economic variables will show that the change was not as profitable as it appeared.⁴

In regards to sociological variables Griliches stated:

It is my belief that in the long run, and cross-sectionally, these variables tend to cancel themselves out, leaving the economic variables as the major determinants of the pattern of technological change. This does not imply that the "sociological" variables are not important if one wants to know which *individual* will be first or last to adopt a particular technique, only that these factors do not vary widely cross-sectionally.⁵

Wilkening reflects the sociological view of the importance of economic factors in explaining rate of adoption.

The acceptance of improved farming practices is determined largely by economic considerations yet, if economic considerations were the only basis of acceptance, improved practices would be adopted as rapidly as their economic advantages were demonstrated. But, not only is there a considerable lapse of time between initial acquaintance and adoption of a practice, but those who would benefit most from improved practices are frequently the last to adopt them.⁶

THE INTERACTIVE EFFECT

It is obvious that a controversy exists between the relative importance of "economic" and "sociological" variables in explaining the rate of adoption of innovations.⁷ It is our contention that once an innovation has fulfilled the minimum considerations of profitability, it is largely the amount of *interaction* between individuals who have and have not adopted an innovation that determines the rate of adoption for individual farmers.⁸ The main result of interaction with individuals who have already adopted is to decrease the subjective uncertainty associated with adoption of the innovation.

To review the controversy, economists have claimed that the rate of adoption of innovations can be explained by such economic variables as profitability, while sociologists claim rate of adoption can be explained by sociological variables such as congruence. It is our belief that most innovations must be economically profitable for them to receive consideration by most farmers, but

⁴Griliches, "Hybrid Corn and the Economics of Innovation."

⁵Griliches, "Hybrid Corn: An Exploration in the Economics of Technological Change."

⁶Eugene A. Wilkening, *Acceptance of Improved Farm Practices in Three Coastal Plain Counties* (North Carolina Agr. Exp. Sta. Tech. Bull. 98; Raleigh, 1953).

⁷Perhaps another reason to doubt the profitability motive in adoption is the existence of adoption of *nonrecommended* innovations, ones that, in fact, are not recommended by experts because they are uneconomical. Farmers view these practices as economically profitable, but in the eyes of objective experts the innovations are not economically profitable. See David G. Francis and Everett M. Rogers, "The Adoption of the Grass Incubator: A Non-Recommended Innovation" (Paper presented at the Rural Sociological Society Meetings, Pennsylvania State University, August, 1960).

⁸Coleman and others pointed out their interactive effect in the adoption of a new medical drug. They called this interactive effect the "snowball process." See James Coleman, Elihu Katz, and Herbert Menzel, "The Diffusion of an Innovation," *Sociometry*, XX (1957), 253-270.

that one of the most important variables affecting rate of adoption, after the prior consideration of economic profitability is fulfilled, is the interaction effect.

The classic statement of the interaction effect was by Ryan and Gross.

There is no doubt but that the behavior of one individual in an interacting population affects the behavior of his fellows. Thus the demonstrated success of hybrid seed on a few farms offers a changed situation to those who have not been so experimental. The very fact of acceptance by one or more farmers offers new stimulus to the remaining ones. The decision to adopt the new practice is a product not only of the operator's position in respect to some pre-existing conditions, but also of the influences and incentives brought to bear. The intensity of the latter is affected by knowledge of previous acceptances especially when the various acceptors are competitors and the trait raises the general productivity level.⁹

The *interactive effect* is the process through which individuals in a social system who have adopted an innovation influence those who have not yet adopted. It should be made clear that we are concerned with the year-to-year rate of adoption within a particular system, and not group-to-group, area-to-area, or state-to-state rate of adoption.

FINDINGS

Since the controversy mentioned has, in part, been concerned with the rate of adoption of hybrid corn, the present study is a reinvestigation of the initial study on the diffusion of hybrid seed corn. Data came from the unpublished thesis of Gross.¹⁰ In his study, Gross presents data which permitted us to determine (1) the rate of adoption per year, (2) the percentage of farmers adopting hybrid corn annually from 1927 to 1939, and (3) the year-to-year profitability of hybrid corn.

Profitability is the difference between returns from adoption of an innovation and its economic cost. Profitability¹¹ was determined by Gross's formula:

$$ER = (P_e \times I) - \frac{(P_s - V_o)}{A}$$

where: ER = extra returns per acre when hybrid seed is used, P_e = price of corn on market, I = increase in output per acre when hybrid seed is used,¹² P_s = price per bushel of hybrid seed, V_o = value of open-pollinated seed per bushel, and A = acres planted by one bushel of corn.¹³

Rate of adoption was determined so that it would be independent of percentage of total adoption by the following formula:¹⁴

⁹Bryce Ryan and Neal C. Gross, "The Diffusion of Hybrid Seed Corn in Two Iowa Communities," *Rural Sociology*, VIII (1943), 15-24.

¹⁰Neal C. Gross, "The Diffusion of a Cultural Trait in Two Iowa Townships" (M.S. thesis, Iowa State College, 1942).

¹¹It should be noted that this is *per acre* profitability and not *per farm* profitability. Gross's analysis shows that earlier adopter farmers have larger corn acreages.

¹² I was considered a constant figure of six.

¹³ A was the seeding rate for round kernels (seven acres).

¹⁴For example, in 1938, 47 farmers adopted hybrid seed with only 55 left to adopt. Therefore, RA equals .855.

$$RA = \frac{\text{Number adopting in given year}}{\text{Number yet to adopt that year}}$$

The formula presented supplies a rate of adoption on a yearly basis; however, it yields a value quite similar to the one presented by Griliches for the adoption of hybrid seed corn in Iowa.¹⁸

The interactive effect is the process through which the individuals in a social system who have adopted an innovation influence those who have not yet adopted. The interactive effect may be measured by the cumulative percentage of farmers who have adopted hybrid seed corn by year.¹⁹ It is obvious from the S-curve that as more people adopt the practices, the steeper the curve becomes,¹⁷ and as more persons adopt, the greater should be the interactive effect on the remaining nonadopters. For example, Gross interviewed 259 Iowa farmers; by 1939, 240 of his respondents had adopted hybrid seed. Therefore, the per cent of adoption for 1939 is 92.6 per cent.

Table 1 presents the profitability, rate of adoption, and per cent of adoption for Gross's respondents from 1927 to 1939.

Table 1. Profitability, rate of adoption, and per cent of adoption of hybrid seed corn

Year	Profitability	Rate of adoption	Interactive effect (cumulative % of adoption)
1927	\$3.38	.004	0.3
1928	3.36	.004	0.7
1929	3.58	.012	2.0
1930	2.88	.024	4.2
1931	1.25	.021	6.1
1932 . . . . .	.69	.000	6.1
1933	1.31	.030	8.8
1934	2.60	.078	15.4
1935	2.82	.100	23.1
1936	3.15	.213	36.6
1937	2.32	.608	61.0
1938	1.55	.855	78.7
1939	1.47	1.890	92.6

¹⁸Griliches' "rate of acceptance" is such that a value of 1.00 means that it takes four years for the acreage devoted to hybrid corn to rise from 12 to 88 per cent, while a value of 0.5 implies that it would take 8 years. See Griliches, "Hybrid Corn and the Economics of Innovation."

It is important to point out that the availability of hybrid seed did not retard diffusion. Gross (*op. cit.*, p. 43) stated, "Not one operator indicated any problem in obtaining hybrid seed after he had initially heard of it." If this were not so, our measure of rate of adoption might simply reflect the availability of the innovation.

¹⁹For an excellent discussion of how the S-curve is a measure of interaction see Coleman, Katz, and Menzel, *op. cit.*

²⁰Actual characteristics of earlier adopters suggest they interact with other

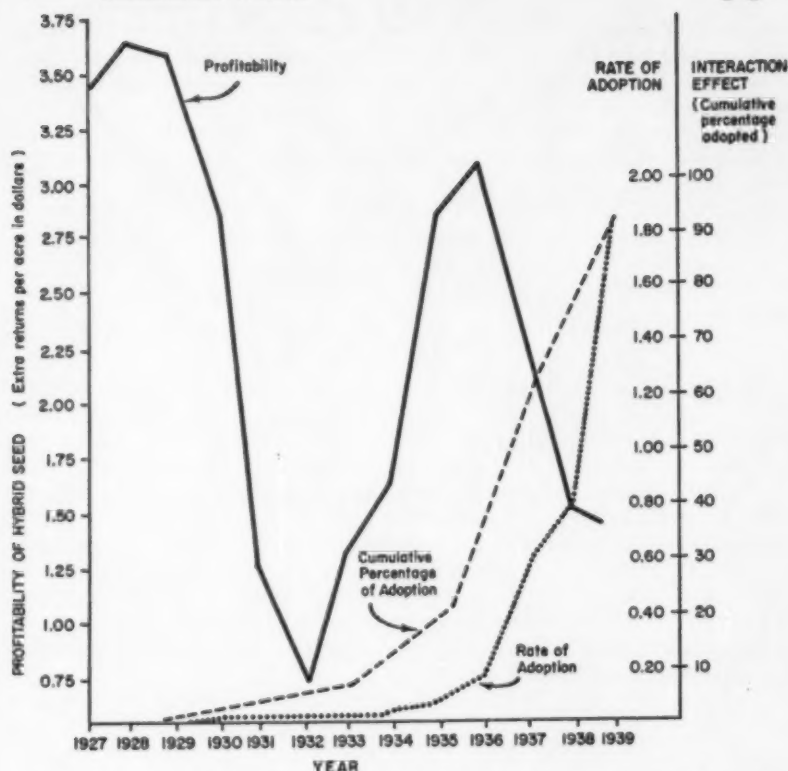


Figure 1. Profitability, rate of adoption, and interaction effect (percentage of adoption) for hybrid seed corn

The effect of interaction upon rate of adoption may be observed graphically in Figure 1. It is apparent from Figure 1 that rate of adoption is not related to profitability but is related to cumulative percentage of adoption.¹⁸

The Spearman rank order coefficient of correlation was utilized to determine the relationship between profitability, rate of adoption, and cumulative percentage of adoption.¹⁹ Rho is $-.358$ between profitability and cumulative

individuals relatively more than later adopters. They are characterized by greater participation in group activities. Obviously there must be a decline in frequency of acceptance after the modal year, simulating a normal curve, since fewer operators remain who may yet accept the trait. Also, those yet to adopt are the ones who are more resistant to the innovation. These factors perhaps explain the leveling of the S-curve as total adoption is approached.

¹⁸Unfortunately, the present study does not include a measure of congruence; Gross's data do not provide for such a measure.

¹⁹Spearman rank order correlation was chosen since (1) the data is of an ordinal nature, (2) rho varies from -1 to $+1$, and (3) rho has a power efficiency of 91 per cent when compared to Pearsonian r .

percentage of adoption, which is less than the .456 required for significance at the 5 per cent level when N is 13. Rho is $-.194$ between profitability and rate of adoption, which is less than the .456 required for significance at the 5 per cent level when N is 13. Therefore, it can be concluded that profitability is not significantly related to rate of adoption or cumulative per cent of adoption of hybrid seed corn.²⁰ In fact, profitability is negatively related to both.

However, rho between rate of adoption and percentage of adoption is $+.911$, which is greater than the .645 required for significance at the 1 per cent level when N is 13. Therefore, rate of adoption is significantly related to the interactive effect, as measured by the cumulative percentage of total adoption.

CONCLUSIONS

The present findings indicate that profitability is not significantly related to rate of adoption on a year-to-year basis with the individual farmer as the unit of analysis. Griliches' contention that profitability explains the rate of adoption is not supported on a year-to-year basis. Profitability, as any other item of information about an innovation, must be diffused. One might hypothesize that the complexity of profitability could be more difficult to perceive than other characteristics of the innovation, such as divisibility. It is our contention that what really determines the rate of adoption of an innovation is the adopter's *perception* of profitability and not objective profitability. There is a vast tradition of social psychology research which indicates the importance of *group interaction* in determining the selectivity of perception, including perceptions of profitability.²¹

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²⁰Griliches, "Hybrid Corn: An Exploration in the Economics of Technological Change," presented similar evidence of a lack of relationship between the cumulative per cent of adoption of hybrid seed corn and profitability.

²¹Kivlin found that profitability, measured by initial cost, continuing cost, and recovery cost, as perceived by a panel of judges, was not related to rate of adoption. Perhaps the individual did not perceive the innovation as profitable. See Joseph E. Kivlin, "Characteristics of Farm Practices Associated with Rate of Adoption" (Ph.D. dissertation, Pennsylvania State University, 1960), p. 45.

FARM-NONFARM DIFFERENCES IN RELIGIOUS BELIEFS AND PRACTICES*

GENERALLY, it is believed that farm families hold more traditional religious beliefs and are more active in church and home religious activities than non-farm families. Social changes have been occurring in rural American society

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which may invalidate these propositions. Yet, since religious beliefs and practices are rooted in value systems which are not subject to major changes in a short time span, it is probable that the traditionally assumed farm-nonfarm differences in religious beliefs and practices still exist. No current research is available, however, to test these hypotheses. Some limited data are offered in this paper to test the hypothesis that Protestant farm parents and farm-reared college students adhere to more conservative religious beliefs and engage more actively in religious practices than nonfarm parents and their college students.

METHODOLOGY

Data were obtained from 38 farm girls and 30 farm boys and from 73 non-farm girls and 24 nonfarm boys who were students at Iowa State University. Only Protestant, unmarried freshman and first-quarter sophomore students were included in these samples. All students completed questionnaires in introductory sociology classes.

Obviously, interpretation of findings must be limited because of the smallness and the selective nature of the samples. The paucity of data encouraged the writer to perform the tests despite obvious sample limitations. One-tailed tests of significance based on the 5 per cent criterion are employed, because in all comparisons farm parents or farm students were expected to exhibit greater religiosity or adhere to more conservative beliefs than their nonfarm counterparts.

RELIGIOUS DIFFERENCES BETWEEN FARM AND NONFARM FAMILIES

When the students' reports of the religious beliefs and practices of their parents were compared, it was observed that:

1. Farm parents attended church more frequently.

Twenty-two per cent of the farm fathers and 3 per cent of their wives were reported to attend church only on "special occasions" or "practically never" compared with 38 per cent of the nonfarm fathers and 20 per cent of their wives. Percentages were 62 and 72, respectively, for farm fathers and mothers contrasted with 50 and 57 for nonfarm fathers and mothers for attending church "practically every Sunday." The residual percentages were accounted for by attendance "about one-half of the time." One-tailed chi-square comparisons of frequency of church attendance were significant for both sets of parents: for fathers, $X^2 = 4.801$; for mothers, $X^2 = 10.955$; in both cases $d.f. = 2$.

2. Farm parents were more active in church activities.

Church activity scores, based upon weights assigned for frequency of church attendance, church membership, and degree of activity in church organizations, showed greater participation among farm parents as compared with nonfarm parents. Farm women had the highest mean, 5.7, followed by nonfarm women with 4.8. Farm fathers were third with a mean score of 4.5, and nonfarm fathers were lowest with a mean of 4.1. Scores could have varied from 0 to 9. The mean difference between the farm and nonfarm women was significant ($t = 2.60$), but the mean difference between the farm and nonfarm men was not significant ($t = 0.90$).

3. Farm parents held more conservative religious beliefs.

The Levinson religious conservatism scale was used to measure the religious beliefs of the students and their perceptions of their parents' religious beliefs.¹ Farm women had the highest or most conservative mean score, 70.3, out of a possible score of 84. Nonfarm women were next with a mean of 66.5. Farm men had a mean score of 64.2, while nonfarm men were lowest with a mean of 58.2. Mean differences between the religious conservatism scores of the two samples of farm and nonfarm women ($t = 2.106$) and the farm and nonfarm men ($t = 2.40$) were statistically significant.

4. Family religious activity was greater among farm families.

An index of family religious activity combined the responses for frequency of saying grace, good night prayers or other prayers and of reading the Bible. Higher scores represented greater family religious activity. The farm families had a mean of 3.7 while the nonfarm families had a mean of 3.2, but the difference was not significant; $t = 0.33$.

These data seemed to indicate that the farm-reared students as contrasted with the nonfarm-reared students were reared in an environment which included a greater emphasis on religious activity and exposure to more conservative religious beliefs. Because of these conditions, college-level students from the two types of background also were expected to show differences in their religious beliefs and practices.

RELIGIOUS DIFFERENCES BETWEEN FARM- AND NONFARM-REARED COLLEGE STUDENTS

The comparisons between the farm and nonfarm students are presented separately for boys and girls since participation in religious activities is generally higher among women.

1. Farm students attended church more frequently in high school.

Ninety per cent of the farm boys compared with 71 per cent of the nonfarm boys said they attended church "practically every Sunday" while they were in high school. The remaining 10 per cent of the farm boys and 17 per cent of the nonfarm boys reported they attended church "about one-half of the time." The other 12 per cent of the nonfarm boys reported they attended church only on "special occasions" or "practically never" or "never." When attendance was dichotomized as "practically every Sunday" versus the other responses, the frequency of attendance between the farm and nonfarm boys was not significantly different; $X^2 = 2.100$.

The observed difference between the farm and nonfarm girls for high-school church attendance was slightly in favor of the farm girls; but the chi-square based on the same dichotomy as used for the boys was not significant; $X^2 = 0.181$. Ninety-five per cent of the farm girls and 90 per cent of the nonfarm girls reported they attended church "practically every Sunday" while they were in high school. Practically all of the other farm and nonfarm girls answered they attended church "about one-half of the time" while in high school.

2. College church attendance was greater among farm-reared boys and girls.

¹The Levinson religious conservatism scale has not been published. However, copies of the scale are available in a Ph.D. dissertation by Wesley Alan and in an M.A. thesis by Philip Lichtenberg, both of the Dept. of Psychology at Western Reserve University, Cleveland, Ohio, 1950.

Approximately 90 per cent of the farm girls attended church "practically every Sunday" while at college compared to 74 per cent of the nonfarm girls. Most of the remaining girls attended church "about one-half of the time." The difference between the two samples of girls for frequency of college church attendance was significant; $X^2 = 2.77$, $d.f. = 2$. Approximately 50 per cent of each sample of males attended church "practically every Sunday" while at college. Of the remaining half of the farm and nonfarm boys, farm boys attended church more frequently. Percentages for the farm and nonfarm boys for attendance "about one-half of the time" were 33 and 29, respectively, "on special occasions," 7 and 0, and "never or practically never," 10 and 21. However, the difference was not significant when the two least frequency cells were combined, and a chi-square with two degrees of freedom was obtained; $X^2 = 0.20$.

3. Farm youth held more "conservative" religious beliefs.

Levinson religious conservatism mean scores for farm and nonfarm girls were 67.8 and 64.9, respectively. Means for both samples of boys were lower, but the farm boys had a higher mean, 62.7, than the nonfarm boys, whose mean was 58.0. However, neither of the tests of mean difference was statistically significant: for girls, $t = 1.02$; for boys, $t = 1.23$.

4. Nonfarm youth more frequently reported a religious revolt experience.

Approximately 17 per cent of the farm boys and 29 per cent of the nonfarm boys reported a revolt experience; $X^2 = 0.591$, $d.f. = 1$. Sixteen per cent of the farm and 27 per cent of the nonfarm girls said they had gone through or were in a period of religious revolt; $X^2 = 1.284$, $d.f. = 1$. Neither comparison was statistically significant.

DISCUSSION

In terms of direction of differences only, the data supported the hypothesis that the farm parents held more conservative religious views, participated more frequently in church activities, and more frequently had home religious practices than nonfarm parents. Furthermore, differences in their home religious experiences apparently were reflected in the behavior and beliefs of the college students. The farm-reared college students appeared to subscribe more frequently to conservative religious beliefs and attended church services more frequently than the nonfarm students.

Most of the differences between farm and nonfarm families or students were small. Unfortunately, the sample sizes were also small: 68 farm and 97 nonfarm families. Still smaller samples were available for the comparisons between farm and nonfarm boys or farm and nonfarm girls. Five of the seven statistical tests of the observed differences between characteristics for the parents were significant; only one of the eight tests between characteristics of the students was significant. However, when the consistent nature of the differences, even though the dependent variables were probably highly interrelated, and the small samples available were considered, acceptance of the hypotheses for the particular samples tested appeared warranted. Attempts to generalize these results present more difficult problems.

The present results permit some limited inferences for farm-nonfarm differences in religious beliefs and practices between families and students

attending a Midwestern, land-grant university. Generalizing to farm-nonfarm religious differences must await further research. It is probable that the present findings, based on farm and nonfarm samples of college students and their families which are probably more alike than the two populations in general, would be confirmed by results based on probability samples of farm and nonfarm families. Only Protestant students and their families were included in present analyses. Similar or different results may be found for Catholic students and their families.

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FACTORS ASSOCIATED WITH PUBLIC ACCEPTANCE OF A NEW HILL-BURTON HOSPITAL*

THIS paper reports the findings of a pilot study which was conducted with the view of refining the concept of hospital acceptance. The pilot study had three objectives in mind. These were: (1) to construct an index of hospital acceptance, (2) to discover variables which might be related to the index of acceptance, and (3) to state hypotheses which would be tested subsequently through more intensive study.

The study was conducted in a northeast Mississippi county which is served by a modern 40-bed county (Hill-Burton) hospital. This hospital has operated since 1950, and is fairly typical of the new hospitals in Mississippi from the standpoint of its physical plant and services offered. Also because of its history it was felt that a study of this hospital would be likely to yield the greatest insight into factors which promote or impede the acceptance of a new hospital by the community. The data for the study were collected by personal interviews with persons directly associated with the hospital, and by interviews with 59 housewives in representative areas of the county. The data procured from the latter group are the primary concern of this paper.

THE INDEX OF ACCEPTANCE

Hospital acceptance was conceptualized as consisting of a complex of general attitudes toward a specific hospital.¹ Thus, the schedule was designed to elicit nine general attitudes toward the county hospital. When these attitudes were placed on a continuum they ranged from thinking about the hospital as a

*Mississippi Agricultural Experiment Station Journal Article No. 842. This investigation was supported by a United States Public Health Service research grant, USPHS-W46, from the National Institutes of Health.

¹A review of literature showed that use of hospitals, attitudes toward hospitals in general, and likes and dislikes toward specific hospitals have been used as indexes of acceptance. It was felt, however, that the integration of a hospital into the institutional structure of a community involves more than mere use. Also, persons generally feel the same way about hospitals in general that they do about the family and country, and a study of the likes and dislikes of hospitals more nearly studies satisfaction with the hospital than acceptance of it.

part of the community at one end of the continuum to willingness to support the hospital through use, contributions, etc., at the other end of the continuum. The questions which elicited these attitudes were:

1. Generally speaking do you think this county has any institutions of which it can really be proud?

2. If an outstanding person from another county came to visit you and you wanted to show him the outstanding institutions of the county, which ones would you show him?

3. Generally speaking, how do you think the local hospital compares with hospitals in communities of similar size from the standpoint of general appearance?

4. From the standpoint of equipment, services offered, etc.?

5. Let us suppose for a minute that I'm a newcomer to this community. I don't know any of the doctors in town and I don't know anything about any of the hospitals in this area. I have just discovered, however, that I must go to a hospital because of a gallstone condition; which hospital would you recommend that I go to?

6. If you discovered that you or some member of your family had to go to a hospital as a result of a heart condition, which hospital would you use?

7. Suppose the county was considering floating a bond issue for the local hospital to use in improving its services, would you vote for it?

8. If you had a surplus of produce from your home garden and you decided to give it away, what would you do with it?

9. Suppose you had some leisure time that you wanted to use to help out one of the local institutions, which one would you help?

The responses to these questions were tabulated, and frequency distributions were made. From the frequency distributions it was possible to dichotomize the responses to each question as indicating acceptance or nonacceptance of the hospital. A score of one was given each respondent for each item which indicated acceptance of the hospital. Those items which indicated nonacceptance received a score of zero. The items were then subjected to an item analysis to determine whether they could be scaled.² All of the items scaled except those having to do with contributions of surplus produce and leisure time to the hospital (items 8 and 9). Thus, the possible range in acceptance scores was from zero to seven (See Table 1).

Table 1. Distribution of Hospital Acceptance Scores

Hospital acceptance scores	Number and percentage of respondents	
	Number	Per cent
0-1	10	17.0
2-3	22	37.0
4-5	21	36.0
6-7	6	10.0

²See James H. Copp, "Trace Line Analysis: An Improved Method of Item Analysis" (Pennsylvania Agr. Exp. Sta., unpublished paper, University Park, 1959).

VARIABLES ASSOCIATED WITH THE INDEX OF ACCEPTANCE

The second concern of the study was to discover factors which might be associated with acceptance. From the review of the literature and the previous experience of the research team, it was felt that factors related to acceptance of the hospital might be subsumed under three types. These were: (1) social and economic characteristics of the respondent, (2) contact with the hospital, as a patient, a visitor, or both, and (3) personal influence of physicians, friends, and neighbors. The relationship between 13 variables and acceptance scores was observed (See Table 2). Only three variables were significantly associated

Table 2. Level of significance of association between three types of independent variables and hospital acceptance scores as observed by chi-square

Type of variables	Significance of association
Characteristics of respondents:	
Level of living scores* . . . . .	.05
Farm status, i.e., farm-nonfarm . . . . .	.30
Age of housewife . . . . .	.50
Education of housewife . . . . .	.50
Contact with hospital:	
Indirect contact, through visits . . . . .	.10
Direct contact, as a patient . . . . .	.10
Satisfaction with hospital† . . . . .	.70
Personal influence:	
Location of family residence (neighborhood) . . . . .	.50
Discussed hospital with family doctor . . . . .	.05
Discussed hospital with hospital employee . . . . .	.70
Discussed hospital with friends and neighbors . . . . .	.80
Remembered reading about hospital in county paper . . . . .	.30
Attended meeting where hospital was discussed as part of program . . . . .	.01

*An index consisting of tenancy status and possession of: (1) telephone, (2) home freezer, (3) automatic washer, and (4) air conditioner, (5) subscription to daily newspaper, and (6) total family income.

†An index consisting of (1) satisfaction with beds, bathrooms, etc., (2) satisfaction with staff, i.e., technicians, nurses, etc., (3) satisfaction with nursing service, i.e., treatment received, (4) satisfaction with housekeeping, (5) satisfaction with food, (6) satisfaction with visiting hours, (7) satisfaction with rest and recuperation aspects of hospital, and (8) satisfaction with treatment from the business office.

with hospital acceptance scores at the .05 level of probability. These were level of living, having discussed the hospital with the family doctor, and having attended a meeting where the hospital was discussed as a part of the program. In each of these cases the expected direction was observed. As level of living increased, so did hospital acceptance. Also persons who had discussed the hos-

pital with their family doctor or attended meetings on the hospital made higher acceptance scores.

INTERPRETATION OF FINDINGS AND SUGGESTIONS FOR FUTURE RESEARCH

Despite the limitations of this study, it has shown that an index of hospital acceptance may be constructed from a complex of general attitudes toward a specific hospital. The index is, of course, tentative and it needs further testing to establish its reliability. Also, although the index is believed to be logically valid, its validity must be established by correlating it with some acceptable criteria of validity.

Given the above conditions, however, the following may be suggested as general hypotheses which need to be tested through further research. These hypotheses are based upon the tentative findings from the pilot study and related empirical and theoretical literature. The first general hypothesis is: *Acceptance of a hospital by the public is associated with social class position.* The data in this study show that acceptance is associated with level of living, but not with other social and economic characteristics. However, given a sufficient number of cases, it seems reasonable to predict that acceptance is associated with such class-related factors as amount and type of formal education, type of employment, and certain qualitative aspects of formal social participation.

The second general hypothesis is: *Acceptance of a hospital by the public is not associated with contact or satisfaction with the hospital.* The hypothesis appears to contradict the theoretical proposition that attitudes toward an object result from experience with the object. However, this proposition assumes that the person has sufficient knowledge of the object to make objective evaluations. The above hypothesis is based upon an assumption, together with some empirical evidence to support it, that most persons do not base their attitudes toward the hospital upon an understanding of its function in curative medicine but upon preconceived notions and the general reaction of their peers.

Finally, attention is turned to the area of personal influence and the third general hypothesis. It is: *Acceptance of a hospital by the public is associated with personal influence.* It appears that this is one of the most important factors in the acceptance of new hospitals by the masses. If performance of the hospital were the only criteria in the acceptance of hospitals, the hospital studied would no doubt enjoy wide acceptance by the community. However, the hospital has been the seat of a power struggle among physicians as well as members of its board of trustees. This has affected the hospital adversely in two ways: (1) some physicians have been responsible for creating a bad image of the hospital among some patients,⁸ and (2) some members of the power structure in the community have used the hospital for their own political aggrandizement. This has been responsible for some resentment among the public and for active opposition by one group to two proposed bond issues designed to improve the hospital's total program. Also many

⁸Fortunately for the hospital these physicians no longer practice medicine in the county.

persons have actively criticized the hospital in regard to charges for service, their light charity load, and the presence of staphylococcus infection. Actually the hospital compares very favorably with other hospitals on all of these factors, as indicated by previous work of the research team in this area. The area of personal influence is, of course, a fruitful research area in itself and requires much more space to develop than is available in this paper.

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Edited by WALTER C. MCKAIN, JR.

Book Reviews

Adams, Richard N., et al. *Social Change in Latin America Today: Its Implications for United States Policy*. New York: Harper & Brothers, 1960. xiv, 353 pp. \$5.00.

This is a timely volume which should be of considerable interest to students of Latin America as well as to those interested in Latin-American relations. It consists of six essays on Latin America, five of which deal with different countries while one is devoted to general observations. Each is prepared by a cultural anthropologist who has carried on research in the area under consideration. The papers were sponsored by the Council on Foreign Relations and were originally presented before a discussion group under the chairmanship of the late Lyman Bryson. The papers were edited for publication in this volume by Philip E. Mosely.

The work contains an introduction by Lyman Bryson, after which follows a general paper, "Some Signposts for Policy," by John P. Gillin. This paper discusses some of the differences between cultures in Latin America and the United States, emphasizes the characteristics and values of the rising middle class, and concludes with suggestions for improving U.S. foreign policy with reference to Latin America.

The second essay is by Allan R. Holmberg and is called "Changing Community Attitudes and Values in Peru: A Case Study in Guided Change." This contains a description of the Cornell project in Peru, which has attempted to bring about the incorporation of a community of hacienda Indians into a modern way of life with a minimum of outside aid. The project is located on the hacienda of Vicos situated in an inter-Andean valley about 250 miles northeast of Lima. Procedures, accomplishments, and implications of this project are discussed.

Richard W. Patch has a paper called "Bolivia: U.S. Assistance in a Revolutionary Setting." After a description of revolutionary changes, he discusses the U.S. assistance programs in Bolivia and feels that in general they have been spread too thin, lack coherence, and create "the expectation that U.S. assistance can be counted on to meet every need or overcome every difficulty" (p. 160).

Charles Wagley's paper, "The Brazilian Revolution: Social Changes since 1930," describes changes including population growth, industrialization, education, mass media, and the class system. He predicts that by the end of this century Brazil will have become one of the great powers.

A paper by Richard N. Adams called "Social Change in Guatemala and

U.S. Policy" outlines changes in Guatemala since the revolution of 1944. It deals with attempts to establish democratic government and improve levels of living. It comments on the failures of some of the American foreign aid programs, the rise of communistic influences, and the Communist bid for power and its aftermath. It emphasizes the need for a dynamic foreign policy adjusted to socioeconomic changes.

The final paper by Oscar Lewis deals with "Mexico since Cárdenas." This outlines changes in Mexico since 1940, including rapid growth of cities and the remarkable growth of the Mexican economy as indicated by a doubling of the volume of the gross national product from 1945 to 1957. Distribution of income is still very uneven, however, with poverty widespread among rural segments of the population and among the lower income groups in the cities. Nevertheless, considerable progress is noted in several aspects of the general levels of living.

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Arce, Antonio M. *Sociología y Desarrollo Rural*. Turrialba, Costa Rica: Instituto Interamericano de Ciencias Agrícolas de la OEA, 1961. xi, 131 pp. No price given.

This is one in a series of publications by the Turrialba Institute dealing with the application of sociological principles to the end of promoting change, largely through the medium of agricultural extension. The co-operation between the Instituto and the Department of Sociology and Anthropology of Michigan State University, which has extended over more than a decade, is certainly the most fruitful international collaboration yet developed in the field of rural sociology. Dr. Arce himself is a product of this interinstitutional program, and he reports that at least seven Ph.D. theses have been based upon research conducted at Turrialba.

This little book, the author explains, grew out of lectures prepared for two conferences on rural sociology, one held at Santa Tecla, El Salvador, in May and June, 1958, and the other at Havana, Cuba, in September and October, 1959. Since those in attendance were agricultural and veterinary science graduates, the author necessarily had to keep the lectures aimed at students without sociological background. This was all to the good. The presentation is simple and clear. Moreover, a central purpose was to show how knowledge of social processes could be applied in making the agricultural education of adults more effective. In this respect his own as well as the other studies made in the Turrialba area constituted valuable illustrative material.

The following chapter headings reveal the general content of the book: "Scope and Utility of Sociology," "The Social Group," "The Rural Community," "Characteristics of the Population," "Nature of Leadership," "The Study of Leadership," "The Function of Leadership," "The Process of Socio-cultural Change," "The Process of Communication in Rural Areas," and "The Process of Diffusion in Rural Areas."

The Instituto and its staff are to be congratulated on producing in the Spanish language books like this and like its predecessor (Manuel Alers Mon-

talvo, *Sociología: Introducción a su uso in programas agrícolas rurales*) based as they are on empirical studies. They should be a very important factor in the spread of rural sociology in Spanish-speaking countries.

LOWRY NELSON

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Ashby, M. K. *Joseph Ashby of Tysoe, 1859-1919: A Study of English Village Life*. Cambridge and New York: Cambridge University Press, 1961. xiii, 303 pp. \$4.75.

This is a well-told tale well worth the telling. Joseph Ashby was born into poverty, of illegitimate paternity but of a remarkable mother who seemed to know just how to guide the unusual abilities her son possessed. He sought work and kinds of jobs that helped him know his part of England, its people and the way they lived. He listened to one and all. He began to write first for a county paper, then for the *Land Magazine*. Shillings so earned often went to purchase a variety of books. From his experiences and his reading Joseph Ashby began to form sound convictions as to the need for allotments, the administration of parish or village charities, education, the value of co-operatives and of the Agricultural Labourers' Union. He was outspoken but analytical on these and other matters. With delight he discovered that a few of the nobility and others, especially the Liberal Party, recognized the problems he was experiencing and were working at them. Such persons began to beat a path to his cottage, craving his earthy wisdom. The reader follows the developments of rural England in the half-century before World War I through what happened in Tysoe and the work of this patient, increasingly important, local leader.

About the turn of the century, to get irrefutable facts for writing and campaigning, Ashby embarked on a self-devised social survey of the agricultural laborer's life in the villages of his area, so well done that the Ministry of Agriculture built upon it in their war-stimulated inquiries.

Eight children were born to Joseph and Hannah Ashby. One daughter is the author of this volume, a leader in rural education at home and in the colonies. A son, after Ruskin College at Oxford, we find at the University of Wisconsin with H. C. Taylor. Arthur Ashby became, of course, one of the world's distinguished agricultural economists and, probably growing out of his background, an ever socially minded one.

The pictures of the Ashby family life and total co-operation, whether in the farm work or ordering data for Joseph's articles, are not merely delightful; they are case illustrations of what today's parent educators advocate.

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Bell, Earle H. *Social Foundations of Human Behavior: Introduction to the Study of Sociology*. New York: Harper and Brothers, 1961. xi, 612 pp. \$7.00.

The author is a sociologist at Syracuse University. He prefaces his book with the statement, "Sociology is one of the most interesting and live subjects in a college curriculum. An introductory text should be organized and written in a manner which will not detract from that interest." The outstanding feature of the Bell volume is its potential for creating student interest. The short illustrative readings and examples will naturally appeal to college undergraduates more than those in most other introductory sociology textbooks. The book is written for the student and in language he can understand. For example, one chapter is entitled, "The Glues that Hold People Together in Groups." By no means, however, are important sociological concepts or principles misrepresented or oversimplified. Pictures and photographs are generally good, and several are really excellent.

The chapter organization of the book is novel. Seven chapters are concerned directly with social systems. The usual institutional approach (family, religion, education, and so on) is totally ignored. Teachers who have been using the more traditional institutional approach in the organization of their courses will be forced to revamp their lecture notes if they adopt the Bell book.

Bell reprints sections of his U.S. Department of Agriculture publications, many of which have been difficult to obtain for teaching purposes, at several places in his book. Extensive use is made of his Sublette, Kansas, study, as well as the other bulletins in the "Culture of a Contemporary Rural Community" series. Many sociologists who have desired a text with rural as well as urban examples will be happier with this book than with previous introductory sociology texts. However, little substantive attention is paid by Bell to the sociology of rural life. In fact, most of the rural sociological research of the past ten years is completely ignored, even where it might appropriately be cited in the present organization of the book.

Another criticism of the volume is that certain ideas are included which have passed out of the mainstream of American sociology. Examples are Thomas' four wishes, and conflict, competition, and co-operation. Nevertheless, the Bell book might be useful at some institutions in an introductory rural sociology course, where an introductory sociology book is desired that can be supplemented with outside readings that are more rural in nature. It is this reviewer's prediction, however, that this book will have most use as a library reference to supplement a rural sociology textbook.

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Firey, Walter. *Man, Mind and Land*. Glencoe, Ill.: The Free Press, 1960. 256 pp. \$6.00.

The problem which Walter Firey poses for his discourse in *Man, Mind and Land* is: Is there a general theory "which will specify the necessary and sufficient conditions for effecting changes in peoples' use of land and resources?"

In their simplest form the resource processes used by a given culture in a given environment, Dr. Firey points out, are those which are physically possible in the environment and those which are culturally available. There are

two limiting factors in any culture which will determine whether or not a given practice is actually used by the individual. The limiting factors are: (1) Is the practice gainful? (2) Is the practice likely to be adopted by others?

Applying these criteria, Dr. Firey demonstrates with data from the Southern High Plains that different sets of resource processes will come into use under development and conservation objectives. The ones actually used are the ones people "agree" to adopt. From this he concludes that *consent* is the condition for resource planning. He states that "the criterion of the plannees' consent is both realistic and progressive. It derives from a systematic theory of resource behavior which is at once adequate to the facts about man as a resource using [sic] creature, and adequate as well to the canon of logical consistency with some plausible postulates concerning human behavior generally."

Despite the theoretical soundness of the formulation and the logical consistency of the presentation, I doubt that the book will gain very widespread reading among those for whom it is intended, namely, the resource planners. First, it does not give a quick answer to the planners' problem of choosing between two or more alternatives on the basis of readily available economic and physical resource data. The planner still has to find some way to determine the answer to the question: "What will the masses do?" Second, the statistical notation used appears to be drawn from set theory and symbolic logic. A more liberal use of footnotes or a statistical appendix setting forth the specific meanings of the notations as used in this presentation would be invaluable to the reader.

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Halbwachs, Maurice. *Population and Society*. Translated by Otis Dudley Duncan and Harold W. Pfautz. Glencoe, Ill.: The Free Press, 1960. 207 pp. \$4.50.

Although this volume was first published in France in 1938, no English edition has been available until this present translation by Otis Dudley Duncan and Harold W. Pfautz. The book provided the first systematic outline of a sociology of population and is based on the Durkheim school of morphology. Even though the volume was first published over two decades ago, probably no other work today so clearly demonstrates the relationship between population and sociological studies in spite of the developments in demographic theory during the period.

Following Durkheim (and Comte), Halbwachs classifies the concerns of sociology under two types: (1) the social structure or the material forms of society which are labeled social morphology and (2) the social ways of acting which may be designated rather broadly as collective behavior or in the terminology of Durkheim "social physiology." Halbwachs also feels that it is necessary to distinguish between the physical aspects of group life and the rest of social reality. In his book he points out that before social roles and institutions can be adequately studied, it is necessary to understand the spatial forms and structures. To illustrate, he shows the relationships among religious,

political, and economic organizations and the morphology of each. He further presents information in *Population in Society* on the relationship between the changing spatial distribution of population and social life. He presents several illustrations to demonstrate that demographic phenomena form the substructures of social life and that these substructures must be accounted for if we are really to comprehend any form of collective behavior.

The translator's preface traces the development of social morphology from Comte to Durkheim to Halbwachs, along with the contributions of various early human geographers. The translators also indicate the close relationship between what Halbwachs refers to as social morphology and human ecology in this country.

A number of the statements of Halbwachs regarding the details of population would not be considered valid in the light of developments in demography during recent years. However, any student of population probably will find this volume of great value in providing a sociological orientation to his work. In fact, almost any social scientist would find that this book provides a new and stimulative perspective.

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Lionberger, Herbert F. *Adoption of New Ideas and Practices*. Ames, Iowa: The Iowa State University Press, 1960. xi, 164 pp. \$3.50.

This little book is a useful addition to the rapidly growing body of literature on adoption and diffusion. It is "an attempt to make the findings of farm practice adoption research more readily available to those interested but busy people who can make use of them." Thus, the book is apparently directed primarily to change agents rather than to research workers.

Lionberger's primary purpose is to summarize the findings of numerous reports of farm practice adoption research. Eight of his ten chapters are devoted to this summary under such headings as "The Individual Adoption Process," "The Community Adoption Process," "Information Sources and Media as Change Agents," and "Social Factors in Diffusion." These chapters are preceded by a brief over-all summary of findings presented in an action-oriented framework. In his final chapter Lionberger, as one of the leaders in this research area, presents some of his views on the major accomplishments and deficiencies of research in this field.

The sociologist who is looking for a synthesis of practice adoption research within a general theoretical framework will be disappointed. Lionberger does not attempt this. On the other hand, the teacher or student of courses dealing with sociological aspects of technological change will find this book very valuable as a source book and as a comprehensive introduction to this area of research. Of particular value to the student should be the annotated list of a hundred research reports included at the end of the book.

Readers who are familiar with Lionberger's meticulous and somewhat plodding style of writing in his research reporting will be surprised at the direct, easily read style employed throughout the book.

In summary, while the reader who has kept up to date on practice adoption research will find little new, he will find a comprehensive summary of research; and the reader who is not familiar with this research will find an excellent introduction to the research findings of the last two decades.

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Wunderlich, Frieda. *Farm Labor in Germany 1810-1945*. Princeton, N.J.: Princeton University Press, 1961. xv, 390 pp: \$8.50.

This book should have a wide appeal both to social scientists and to social-policy makers. Prior to 1933 the author was a judge in the Supreme Court of Social Insurance in Germany; hence the book is specially oriented toward governmental programs relating to farm labor. German experience with public protections to farm workers began in 1884, when they were first covered by accident insurance. Invalid and old-age insurance date back to 1889, sickness insurance to 1914, and unemployment insurance to 1918. Many refinements were made in these programs so as to meet the special needs of farm workers.

This does not mean that farm labor occupied a favored position in the German economy. In fact it was traditionally marked by a low social status, low pay, poor housing and poor work conditions. Early legislation related largely to industrial workers, whose better economic position led to a strong movement of farm laborers into urban employment. Importation of foreign labor for farm work delayed needed improvements.

After World War I the position of the farm worker changed from that of a servant or landless subject to that of an independent worker who could organize into trade unions and set up collective work agreements with employers. Agricultural unions achieved their greatest influence, however, through collaboration with industrial unions on labor legislation. Worker councils, labor courts, and social insurance courts were advancing the position of farm workers when Hitler came into power. He destroyed the unions, subverted most of the social legislation, and set up a system of labor allocation and control. So the book provides an opportunity to observe farm labor under feudalism, democracy, and totalitarianism.

This work has been prepared primarily for the student rather than the casual reader. It is highly factual and carefully documented. Explanatory footnotes and an extensive bibliography add to its usefulness.

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Edited by LOUIS J. DUCOFF*

Bulletin Reviews

Brooks, Melvin S., and Robert L. Hilgendorf. *The Social Problems of Migrant Farm Laborers*. Department of Sociology, Southern Illinois University, Carbondale, Oct., 1960. 242 pp.

Basically an analysis of the findings of a field survey of migratory strawberry pickers in southern Illinois, this publication includes also a short review of selected studies in the field of migratory labor, and a discussion of the broader issues in the national migratory labor problem. The value of the findings of the survey is somewhat limited by the small size of the universe sampled, approximately 800 workers. The sample—a total of 202 workers, 135 white and 67 nonwhite—proved to be too small and too diverse to work with easily. The data, however, have been weighed exhaustively. These are presented in 97 tables, some of which break into new ground in migratory labor research.

Major emphasis in the report is on education of migrant children, but such related economic and social aspects as mobility, employment, income, housing, health, and medical care are also covered. The survey points up the differential rates of advancement in meeting migrant labor problems. Educationally, a majority of the children were retarded at least one grade, and relatively few attended school in more than one locality, no matter how often they moved. As for housing, two-thirds of the migrant families were housed in one room, often a shack, shed, or barn. As for cleanliness, only 7 per cent of the migrants had access to bathing facilities other than a washtub, and more than half had no access to laundry facilities. In regard to health care, 70 per cent of the migrant children had had at least one medical examination by a physician, 78 per cent had been vaccinated for smallpox and more than half for polio.

On some points, the authors were extremely careful; for example, answers in regard to school attendance were checked by inquiries directed to school authorities in the reported localities. On other points they were less cautious, for instance, in using broadly estimated figures made by special interest groups. The many ramifications of the national migratory labor problem are handled very well. Issues in regard to minimum wages, child labor, importation of labor, and mechanization are presented analytically and without bias.

WILLIAM H. METZLER

*Economic Research Service
U.S. Department of Agriculture*

*Assisted by Elsie S. Manny.

Hassinger, Edward W., and Robert L. McNamara. *The Families—Their Physicians—Their Health Behavior in a Northwest Missouri County*. Missouri Agr. Exp. Sta. Res. Bull. 754; Columbia, Sept., 1960. 43 pp.

This third report from the Harrison County health study is based upon information obtained from 152 representative open-country households. The study, largely exploratory, is concerned with the attitudes and opinions of the respondents toward selected aspects of health and medicine as well as actual performance in maintaining health. Topics discussed include (1) family-physician relationship (attitudinal and behavioral), (2) illness and its management, (3) use and opinions of hospitals, (4) preventive health measures, (5) selected nutrition habits, and (6) home medications. The study, however, moves beyond the descriptive stage at times and tests hypotheses with respect to the association of age, education, income, level of living, and size of household to selected aspects of the relationship of the families to physicians and hospitals as well as to the more common health and nutrition practices.

The study does not make explicit a theoretical framework, and the authors do not state the implications of their findings to health action or to sociological theory. The study has many implications, however, that the reader may want to draw for himself. The authors make several comparisons between the findings of the study and a parallel study conducted in Laclede County. A tremendous contribution to the sociology of health may be made by the authors if they integrate the findings from each of these studies into a general manuscript at a higher level of abstraction.

GERALD O. WINDHAM

Division of Sociology and Rural Life
Mississippi State University

Inman, Buis T., and John H. Southern. *Opportunities for Economic Development in Low-Production Farm Areas*. USDA Agr. Inf. Bull. 234; Washington, Nov., 1960. 38 pp.

The Agricultural Research Service through the Farm Economics Research Division has conducted research in geographic areas designated as having a substantial degree of low farm production. This bulletin incorporates the findings and conclusions of seven of these research studies. The report is "concerned primarily with the problem of chronic low farm production and under-employment of rural families and resulting low family incomes." The areas studied are north-central and western Florida, north-central New Mexico, northern Lower Peninsula of Michigan, clay hills of Mississippi, eastern Ozarks of Missouri, northeastern Texas, and northeastern Tennessee.

Data on income show that a major part of the net money income of rural families in low-income areas is obtained from nonfarm sources. This is true for farm as well as for nonfarm families. But incomes from all sources were low for both farm and nonfarm families. Other conclusions drawn from the study areas include: (1) low-production farms have limited farm resources; (2) the type of agriculture in low-income areas is changing from small intensive row-crop farming to more extensive land use; (3) adjustments in the use of farm

resources have not kept pace with the loss of farm labor; and (4) low incomes in the areas are associated with limitations in labor capacities.

Observations presented in this report should come as no surprise to those most familiar with problems of low-income areas. This information, however, should be very useful to those engaged in action and planning programs designed to improve the existing conditions of such areas.

A number of questions are raised in the bulletin. More specific research is needed to answer these and other questions related to the problems of low-income areas.

ANDREW W. BAIRD

*Social Science Division
Glennville State College, West Virginia*

Photiadis, John D. *Contacts with Agricultural Agents: Factors Related to Various Types of Contacts Farmers Have with Professional Agricultural Workers and the Effect of These Contacts on Technological Change*. South Dakota Agr. Exp. Sta. Bull. 493; Brookings, (undated), 36 pp.

Objectives of this study conducted in Deuel County, South Dakota, are most clearly stated by a series of questions, including the following: Who are the farmers who come in contact with professional agricultural workers? Which contacts and which media in general do farmers consider most helpful? What is the influence of contacts on skills (actual adoption of farm practices), knowledge (about farming), and attitudes (toward recommended farm practices)? What are the characteristics of farmers who prefer specific types of contacts (personal, group, mass)?

The study is based on data from a 15 per cent random sample of farm operators (224 persons) in the 16 townships of Deuel County. County agricultural workers included the county agricultural agent and the Farm and Home Development agent of the Extension Service, the SCS work unit conservationist, the ASC office manager, and the FHA county supervisor. An index of the "main variable in this study. . . , contacts with professional agricultural workers in the county," was constructed by a panel of judges assigning weights for each type of contact, the weights being based on average rank order of the 13 types of contacts. No explanation is given on the construction of a second composite index measuring adoption, knowledge, and attitudes. Without this explanation the reader is forced to question in particular the dimensionality of such a composite measure. Lack of clarity in reporting is a general weakness of the bulletin.

The contention that contacts of farmers with agricultural workers are influential in the three areas of practice adoption—actual adoption, knowledge about farming, and attitudes toward recommended practices—is supported by this study. Perhaps more important for current diffusion research are two other findings: "(1) It has been shown that factors dealing with economic and social and personal motivation influence contacts and that they influence specific types of contacts. (2) . . . Such factors also influence the learning situation. This has been demonstrated by showing that farmers who have the same contacts acquire different learning experiences where their motivation is different." This study, though weak in presentation, is an

important addition to the body of knowledge on diffusion of agricultural technology.

J. GILBERT HARDEE

*Department of Rural Sociology
North Carolina State College*

Spaulding, Irving A. *Motivation for Communicative Behavior*. Rhode Island Agr. Exp. Sta. Bull. 354; Kingston, June, 1960. 32 pp.

Rural sociologists will have mixed reactions from this publication. Those concerned with developing and exploring projective techniques in an effort to understand and interpret human behaviour will welcome the employment of this method by Spaulding but may find it difficult to agree with his analysis and interpretation of the data. Although the literature cited in this bulletin includes the writings of G. H. Mead, R. E. Park, H. S. Sullivan, and other social scientists, a very different interpretation might have been placed on the interviewees' responses had there been any reference to writings of psychiatrists of the Freudian school.

The hypothesis under test is "that a feeling of not being mutually involved—experienced as a feeling of 'being out of contact with people' or a feeling of 'separation from a group with which one identifies'—motivates people to engage in communicative behaviour." The evidence which the author claims supports this hypothesis is drawn from an "extreme" case of disturbance of interpersonal involvement between two individuals, a teacher of an adult class in basket-weaving and a member of the class. The answers to the six stimulus pictures and probe questions are those of this one class member. These are the data used to test the hypothesis.

As Spaulding himself notes "a limitation of this procedure derives from the assumption that an interviewee's projected description of the group relationship has validity not only as a personal projection of the interviewee but also as a description of the group relationship."

HELEN C. ABELL

*Economics Division
Canada Department of Agriculture*

Ulsaker, Norman L., W. B. Back, and William F. Lagrone. *Resources and Incomes of Rural Families in the Ozark Plateau Region of Northeastern Oklahoma*. Oklahoma Agr. Exp. Sta. Processed Ser. P-377, in co-operation with Agr. Res. Serv., USDA; Stillwater, Mar., 1961. 55 pp.

This bulletin is an analysis of an area which has been designated as a low-income and low-level-of-living area for families in agriculture. The first half of the study is devoted to the historical trend for the larger area, as this can be observed on the basis of available census of agriculture and census of population data. In this phase, the analysis is limited to changes occurring between 1940 and 1950. For agricultural data, information for the 1954 census is also included.

The second section is a report on a field study in which soil type is the primary control factor. Within this section a detailed statistical analysis using

correlation and regression formulas is completed for 37 part-time and 34 full-time farmers who fall in the middle income group (\$250 to \$5,000) observed in study. On the basis of the analysis, the authors conclude that both labor and land resources are underemployed and that nonland capital tends to be the first limitation to more efficient resource use.

The sample included 171 nonfarm households. Very little attention is given to this portion of the sample in the present analysis. No doubt the authors intend to utilize these data further in subsequent studies. The reviewer thinks it would have been entirely permissible to omit references to the nonfarm household sample in the present study, since the primary interest in this instance is the farm households. In this analysis the nonfarm households merely serve to clutter up the tabular presentation.

HARALD A. PEDERSEN

*Department of Economics and Sociology
Montana State College*

Wilkening, E. A., and Donald E. Johnson. *Goals in Farm Decision-Making as Related to Practice Adoption*. Wisconsin Agr. Exp. Sta. Res. Bull. 225; Madison, Feb., 1961. 36 pp.

Wisconsin studies on adoption of farm practices are making substantial contributions to this area of research. "The present study is an attempt to determine the extent to which [the goals of] 'profit,' 'quality of the product,' 'ease and convenience,' the desire to 'keep up with the best farmers,' and 'maintaining good relationships with others,' enter into making different types of farm decisions." Procedures are carefully described and limitations of method recognized.

The study sample is 139 dairy farmers of Rock County, Wisconsin, and the five goals mentioned above are considered in relation to 14 types of farm decisions relevant to dairy farming. The analysis deals with: "(1) the variation in goals considered by type of decision; (2) the effect of status and role of the farmers upon goal orientation. . . ; and (3) the influence of the priority of goals on adoption of specific farm practices." "Profit" emerged as the most frequently recognized goal in the 14 decisions, followed by "ease and convenience" and "quality or standard."

Results of the study raise tantalizing questions concerning the need for more thorough investigation of the noneconomic factors in farmers' decision making. An adequate knowledge of the decision-making process as a guide for agricultural extension work will require many more investigations of the type presented in the Wisconsin study. Social scientists contemplating research in this field are urged to read with care the authors' methodological comments that are generously distributed throughout the publication. They are especially helpful when they warn the reader of methodological deficiencies that need to be overcome. This is another careful and thoughtful contribution from the Wisconsin staff.

ROBERT A. POLSON

*Department of Rural Sociology
Cornell University*

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- Blume, George T., and Lawrence M. Hepple. *The Church in Rural Missouri. Midway in the 20th Century. Part VI. Spatial and Social Relationships*. Missouri Agr. Exp. Sta. Res. Bull. 633 F; Columbia, Sept. 1960. 32 pp.
- Cole, Lucy W., and Harold F. Kaufman. *A Mississippi Program in Trade Center Development*. Mississippi Agr. Exp. Sta. Prog. Rpt. in Sociology and Rural Life No. 18; State College, March, 1961. 35 pp.
- Collazo-Collazo, Jenaro, José Mariano Ríos, and Charles Eugene Ramsey. *Development of a Level of Living Scale for Puerto Rico Rural Families*. Puerto Rico Agr. Exp. Sta. Bull. 156; Rio Piedras, Oct., 1960. 27 pp.
- Ellenbogen, Bert L., Donald G. Hay, and Olaf F. Larson. *Changes in the Availability and Use of Health Resources in Two Central New York Counties, 1949 and 1957*. Cornell Univ., Dept. of Rural Sociology Bull. 54, in co-operation with Agr. Marketing Serv., USDA; Ithaca, June, 1959. 56 pp.
- Ellenbogen, Bert L., Donald G. Hay, and Olaf F. Larson. *Changes in the Availability and Use of Health Resources in Two Central New York Counties, 1949 and 1957. Statistical Supplement to Dept. of Rural Sociology Bull. 54*. Cornell Univ. Dept. of Rural Sociology in co-operation with Agr. Marketing Serv., USDA; Ithaca, June, 1959. 40 pp.
- Fuguitt, Glenn V. *Rural and Urban Population Change in Wisconsin 1950-1960*. Univ. of Wis. Pop. Series No. 2; Madison, March, 1961. 82 pp.
- Fukutake, Tadashi. *Studies on the Rural Community in Japan*. Tokyo Univ. Press, 1959. 12 pp.
- John, Bruce M. *A Bibliography of Research in Eastern Kentucky*. Cooperative Ext. Serv., Univ. of Kentucky, Lexington, June, 1961. 38 pp.
- Kaufman, Harold F., and Lucy W. Cole. *Size of Trade Center and Development Programs*. Mississippi Agr. Exp. Sta. Bull. 618; State College, April, 1961. 8 pp.
- Lynch, John V., and Paul J. Ferree. *The Agricultural Economy of Bolivia*. Econ. Res. Serv., ERS-Foreign 1; USDA, Washington, May, 1961. 19 pp.
- Martin, James R., and John H. Southern. *Part-Time Farming in Northeast Texas*. Texas Agr. Exp. Sta. Bull. 970, in co-operation with Agr. Res. Serv., USDA; College Station, Jan., 1961. 23 pp.
- Nielson, James. *The Michigan Township Extension Experiment: The Experimental Program and Farmers' Reaction to It*. Michigan Agr. Exp. Sta. Tech. Bull. 284; East Lansing, 1961. 116 pp.
- Pedersen, Harald A. *Montana's Human Resources: Age and Sex Distribution*. Montana Agr. Exp. Sta. Cir., 234; Bozeman, June, 1961. 15 pp.
- Rogers, Everett M., and Rabel J. Burdge. *Muck Vegetable Growers: Diffusion*

- of Innovations among Specialized Farmers.* Ohio Agr. Exp. Sta. Res. Circ. 94; Wooster, Mar., 1961. 26 pp.
- Rohrer, Wayne C. *A Century of Migration of the Kansas Population.* Kansas State Univ. Economics and Sociology Rpt. 1; Manhattan, May, 1961. 22 pp.
- Taylor, Lee, and Glenn Nelson. *Minnesota's People and Farms: 1950-1960.* Minnesota Agr. Exp. Sta. Misc. Rpt. 45; St. Paul, March, 1961. 30 pp.
- U.S. Dept. of Health, Education, and Welfare, Public Health Service. *Indians on Federal Reservations in the United States—A Digest. Phoenix Area.* Washington, Jan., 1961. 58 pp.
- Wilber, George L., and Ellen Bryant. *Growth of Mississippi Counties and Cities 1950 to 1960.* Mississippi Agr. Exp. Sta. Bull. 608; State College, Dec., 1960. 8 pp.
- Windham, Gerald O., Elisabeth J. Stojanovic, and Marion T. Loftin. *Attitudes toward a New Hill-Burton Hospital in a South Mississippi County.* Mississippi Agr. Exp. Sta. Prog. Rpt. in Sociology and Rural Life No. 18; State College, April, 1961. 13 pp.
- Youmans, E. Grant. *Health Problems of Older Persons in Selected Rural and Urban Areas of Kentucky.* Kentucky Agr. Exp. Sta. Prog. Rpt. 104; Lexington, May, 1961. 55 pp.

Edited by MARION T. LOFTIN

News Notes

COLLEGES AND UNIVERSITIES

Cornell

Olaf F. Larson has been awarded a Fulbright research grant for 1961-1962. He will be affiliated with the University of Naples, Italy, where he will co-operate in a study of the impact of industrialization in South Italy on rural communities. During his leave, Philip Taietz will be acting head of the Department of Rural Sociology. William W. Reeder will be on sabbatic leave during the fall term. C. E. Ramsey has returned from a year's sabbatical on which he was research consultant to the Puerto Rico Agricultural Experiment Station. Bernice M. Scott has been promoted to associate professor. Bert Ellenbogen served as consultant during May and June to ICA in Brazil in the preparation of a university contract for training rural social scientists. John H. Kolb, professor emeritus from the University of Wisconsin, has assumed teaching duties for the fall semester. Nelson LeRay, Economic Research Service, USDA, is being stationed at Cornell to conduct a research project in rural development. Other newly approved experiment station research projects include a study of changes in rural membership composition of voluntary organizations, under John Harp; a longitudinal study of attitudes and opinions of college students, under Philip Taietz and John Harp; and a project on technological change in the rural Philippines, being directed by Robert A. Polson. Bert Ellenbogen received a two-year grant of \$83,356 from the National Institutes of Health to complete the analyses of data for the study: "Availability of Health Services and Their Use in Upstate New York."

Mississippi State University

Marion T. Loftin has been appointed head of the Division of Sociology and Rural Life. Loftin succeeds Harold F. Kaufman, who was relieved of the headship at his request so that he could devote more time to research and writing. Kaufman has served as head of the Division of Sociology and Rural Life in this institution since the department was organized in 1948. Kaufman will spend the last half of 1961 in India on a Fulbright research grant studying the community development movement in that country. On his return he will continue his research and teaching appointment and his responsibilities as director of the Social Science Research Center. Wilfrid C. Bailey attended the Summer Seminar on Urban Research sponsored by Regional Extension in

Urban Studies of the Institute for Research in Social Science, University of North Carolina, Chapel Hill, N.C., July 26 to August 25, 1961.

University of Missouri

Charles E. Lively, chairman of the Department of Rural Sociology, was the recipient of the W. Scott Johnson Award, for "Distinguished Service to the Field of Public Health in Missouri." The presentation and a citation were made at the annual meeting of the Public Health Association on May 9. Also, Lively will be made professor emeritus of Rural Sociology at the Annual Spring Commencement, June 6, 1961. John Holik read a paper entitled "What Should Be Expected of Extension Research" at the National Extension Research Seminar, held at Purdue University, Lafayette, Indiana, April 18 to 21. Saad Gadalla, director of the accident research program of this department, reported on the Missouri Farm Accident Study and served as consultant to the workshop on Farm Accident Statistics at the fourteenth annual National Institute for Farm Safety, held at Crystal Springs, Arkansas. This national meeting of agricultural engineers was sponsored by the National Safety Council and the University of Arkansas. Edward W. Hassinger, recently promoted to associate professor of rural sociology, was elected president of Alpha Pi Zeta, honorary social science fraternity, for the year 1961-1962. Herbert Lionberger's book, *Adoption of New Ideas and Practices*, has been published by the Iowa State University Press. Robert L. McNamara is the author of the chapter on population of the recently published report of the Highway Finance Project Committee of Missouri. This is a financial study of Missouri's road needs to 1980. Also, McNamara is the author of an article entitled "Population Projections for Missouri" appearing in the May-June issue of the *Business and Economic Review*, published by the University of Missouri.

Ohio State University

Dr. Mervin G. Smith, chairman of the Department of Agricultural Economics and Rural Sociology, is editor of a book, *Adjustments in Agriculture: A National Basebook*, published by Iowa State University Press. A Eugene Havens has been appointed instructor in rural sociology. He was formerly assistant dean of men at the Ohio State University. He will conduct research on the adoption and diffusion of farm innovations. Havens' appointment brings the total faculty in rural sociology to ten. Everett M. Rogers has been promoted to associate professor of rural sociology. He has been appointed in the Ohio Agricultural Extension Service, in addition to his teaching and research duties. Rogers spent a portion of the summer visiting rural sociological research organizations in six European countries. One purpose of his trip was to gather material for his book on the diffusion of innovations, which is to be published next year by Free Press. Joseph Crymes has been promoted from instructor to assistant professor of rural sociology. He is engaged in teaching and in research on farm cardiacs and educational decisions of rural youth. Newly appointed research assistants in rural sociology are David Cartano from Iowa State University and Leon Neher from McPherson College.

Pennsylvania State University

Pennsylvania State University offers a correspondence course of six lessons dealing with group concepts, cultural behavior, and community organization.

RURAL SOCIOLOGY

VOLUME 26

1961

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Titled *Effective Community Living*, it is an attempt briefly to present sociological concepts to laymen in nontechnical language. Roy Buck, associate professor of rural sociology at Penn State, is the author. One lesson is on leadership and program planning, another on group discussion. "How Groups Change" is the title of the final lesson. To get the course, write to Correspondence Courses, 202 Agricultural Education Building, University Park, Pennsylvania. Include your name, address, and registration fee of \$1.50. Make checks payable to the Pennsylvania State University.

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Quid Pro Quo, University Vacations Exchange, 865 West End Avenue, New York 25, N.Y., is a new service to fill the need of faculty members planning to visit new areas to obtain inexpensive and comfortable living accommodations. This is accomplished through the exchange of living accommodations between faculty members going to one another's areas. Exchanges are arranged between faculty members in different parts of this country, between faculty members in this country and Canada, and between university personnel here and in western Europe.

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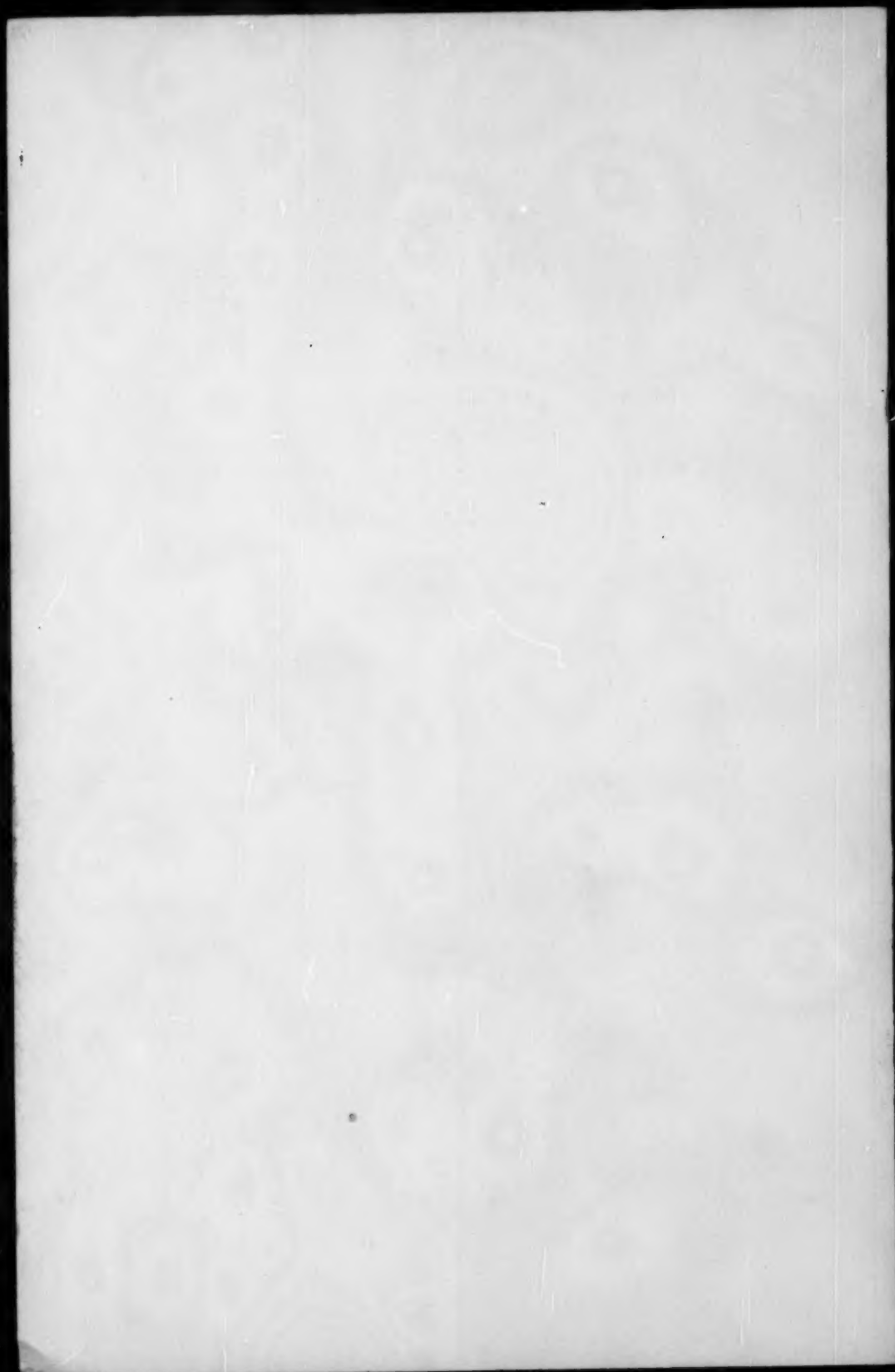
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